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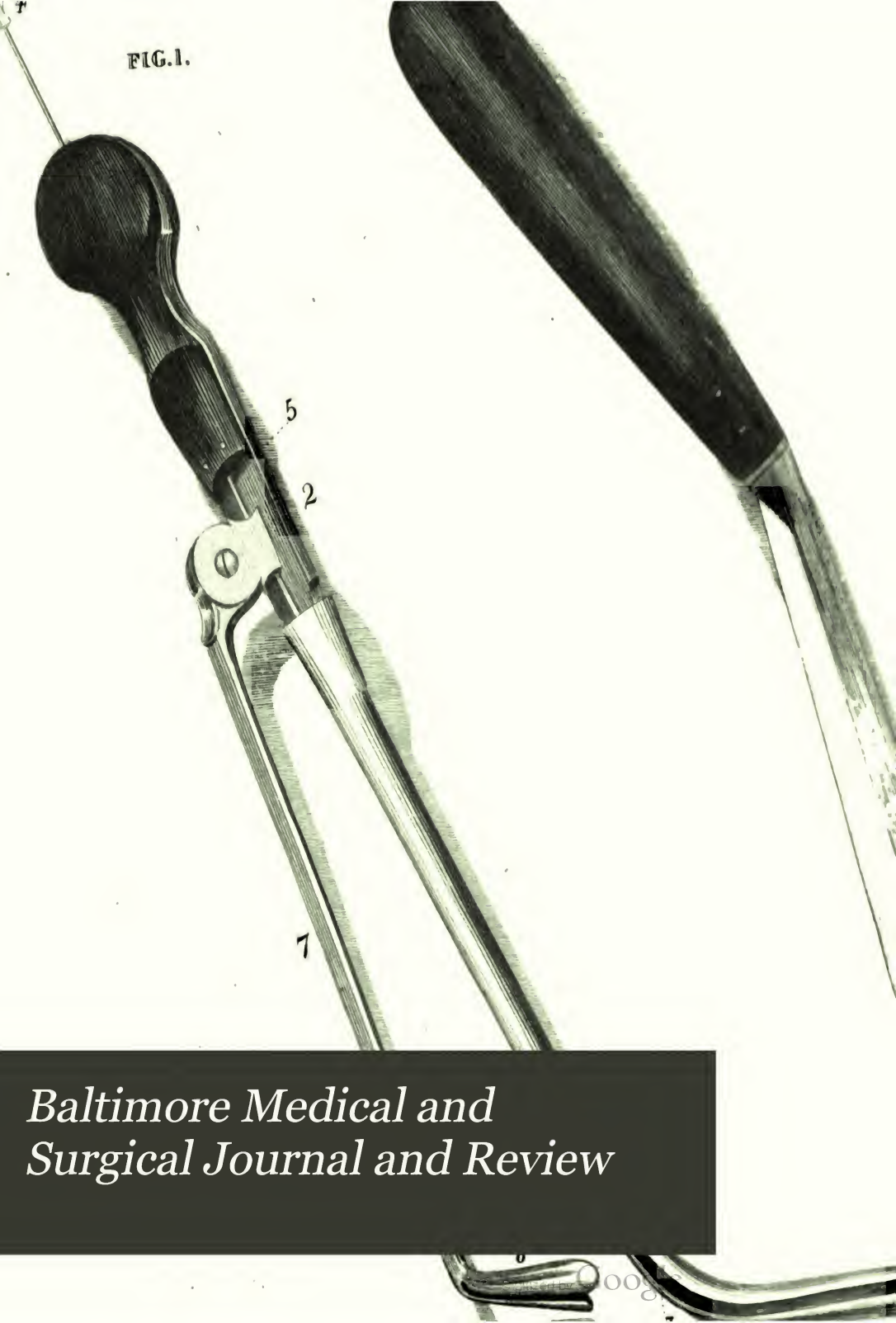

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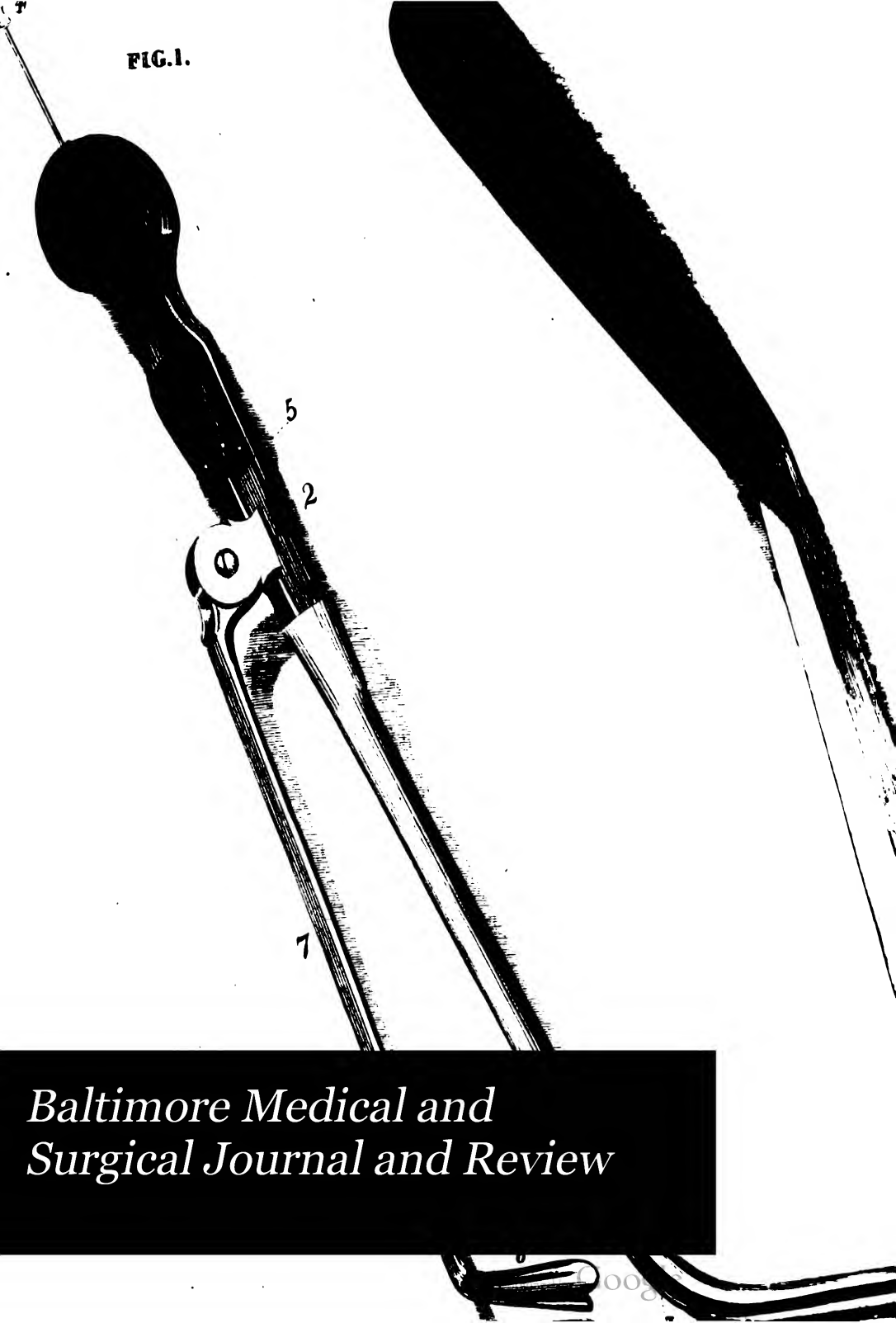

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JOURNAL AND REVIEW.

SUPPORTED BY

AN ASSOCIATION OF PHYSICIANS AND SURGEONS.

EDITED BY

E. GEDDINGS, M.D.

PROFESSOR OF ANATOMY AND PHYSIOLOGY IN THE UNIVERSITY OF MARYLAND, &c.

"Qui castis veterum observationibus jungunt recentiorum inventa, videntur habere opti medicinæ fundamenta." VAN SWIET.

VOL. II.

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EDITORIAL NOTICES,

And acknowledgments to Correspondents.

Several communications have been received, which we have been obliged to omit for want of room.

We would respectfully request our correspondents to send their communications at as early a period as possible, after the publication of a preceding number. They frequently come to hand so late, that we are obliged to defer the publication of them until the next quarter.—We would also beg leave respectfully to remind some of our contributors, that they are not subserving the interests of science by the mere appearance of their names on our list.—Every physician who is much engaged in practice, must be constantly in the way of collecting valuable facts, and by neglecting to communicate them for the common good, he is guilty of a violation of one of his obligations to the profession.

We owe an apology to our subscribers for the late appearance of the present number. It has been occasioned in part by domestic affliction, but mainly by the difficulty of obtaining a sufficient number of hands to perform the mechanical part of the undertaking. Such arrangements will be made as will obviate a similar occurrence in future.

The following Works and Periodicals have been received since the publication of our last number.

A Treatise on the Diseases of the Eye. By W. Lawrence, M. D. F. R. S. &c.—London, 1833. See Reviews.

A Dictionary of Practical Medicine; comprising General Pathology, the nature and treatment of diseases, morbid structures, and the disorders especially incidental to climates, to the sex, and to the different epochs of life, &c. By James Copland, M. D. Consulting Physician to Queen Charlotte's Lying-in Hospital, &c. Part I. Boston: Lilly, Wait, Colman and Holden, 1834. (*From E. J. Coale & Co.*) Part II. London: Longman, Rees, Orme, Brown and Longman, 1833.

Library of the Medical Sciences. The Cyclopædia of Practical Medicine and Surgery, a Digest of Medical Literature. Edited by Isaac Hays, M. D. &c. Parts 3 and 4. Carey, Lea & Blanchard, Philadelphia, 1834.

An Address, Introductory to a course of Lectures delivered in the Hall of the Medical College of South Carolina, at the opening of the

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session of 1833–4. By GUNNING S. BEDFORD, M. D. Professor of Obstetric Medicine, and the Diseases of Women and Children. Published at the joint request of the Trustees and the Students of Medicine. (*From the author.*)

An Introductory Lecture to the course of Chemistry, applied to the Arts; delivered in the Franklin Institute of Philadelphia. By JOHN K. MITCHELL, M. D. &c. (*From the author.*)

An Introductory Lecture on the value of great professional reputation; with suggestions for its attainment. A Lecture, introductory to the summer course of the Medical Institute of Philadelphia. By JOHN K. MITCHELL, M. D. Lecturer on Medical Chemistry, &c. (*From the author.*)

The Pilgrim's Progress in Phrenology. By UNCLE TOBY. (*From the author.*)

An Introductory Address, delivered before the Young Men's Association for Mutual Improvement, of the city of Albany. By D. D. BERNARD.

A Reply to a Pamphlet by S. HENRY DICKSON, M. D. entitled, Statements, &c. (*From the author.*)

A Table, exhibiting the Doses and Properties ascribed to the principal medicines and officinal preparations. For the use of the Materia Medica Class of the University of Maryland. By Professor DUNGLISON. (*From the author.*)

Thoughts on the policy of establishing a School of Medicine in Louisville; together with a sketch of the present condition and future prospects of the Medical Department of the Transylvania University. By JAMES CONQUEST CROSS, M. D. (*From the author.*)

Catalogues of the Students of the University of Maryland; the University of Pennsylvania; the Transylvania University; the Medical College of Ohio; and the Medical College of the state of South Carolina.

An Address, delivered to the Graduates in Medicine, at the annual commencement of the University of Maryland, on Wednesday, March 19th, 1834. By Professor DUNGLISON. Published by the Graduates and Students. (*From the committee.*)

A Valedictory Address, delivered at the annual commencement of Washington Medical College, Baltimore. By SAMUEL ANNAN, M. D. Professor of Anatomy and Physiology. (*From the author.*)

The Edinburgh Medical and Surgical Journal, for January, 1834.

The Medico-Chirurgical Review, edited by JAMES JOHNSON, M. D. &c. For October, 1833, and January, 1834.

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The Dublin Journal of Medical and Chemical Science, from January, 1833, to January, 1834.

The London Medical and Surgical Journal, from January to December, 1833.

The London Medical Quarterly Review, for October, 1833. (*This has taken the place of the London Medical and Physical Journal.*

The London Medical Gazette, for November and December, 1833.

The London Lancet, for November and December, 1833.

Gazette Medicale, for January, 1834.

The American Journal of the Medical Sciences, for February, 1834. (*In exchange.*)

The Boston Medical and Surgical Journal, for November, December, January, February and March. (*In exchange.*)

The Transylvania Journal of Medicine and the Associate Sciences, for October, November and December. (*In exchange.*)

The Western Medical Gazette, for February and March. (*In exchange.*)

De Morbo qui Læsiones in cadaveribus dissecandis, &c. auctor Mauritius Leo-Wolf. Heidelberg, 1832. (*From the author.*)

An account of some experiments made on the habits of the Vultures inhabiting Carolina; the Turkey Buzzard, (*cathartes aura,*) and the Carrion Crow; (*cathartes iota;*) particularly as it regards the extraordinary powers of smelling, usually attributed to them. By J. Bachman. (*From Mr. Audubon.*)

Authors and publishers who may be desirous of having their works noticed, are requested to transmit us a copy as soon after publication as possible, when they will receive the earliest attention. Editors of American or Foreign Medical Journals, who may wish to exchange with us, will please forward their numbers, and ours shall be promptly sent to their direction. They may be transmitted either direct, or through any of our agents.

All communications for the Journal should be sent as early as possible after the publication of the preceding number. As the Editor has no participation in the business of publication, he requests that all communications and letters may be addressed exclusively to the publishers, Carey, Hart & Co. corner of Baltimore and Charles streets, Baltimore, for the Baltimore Medical and Surgical Journal. Letters must, in all instances, be post paid.

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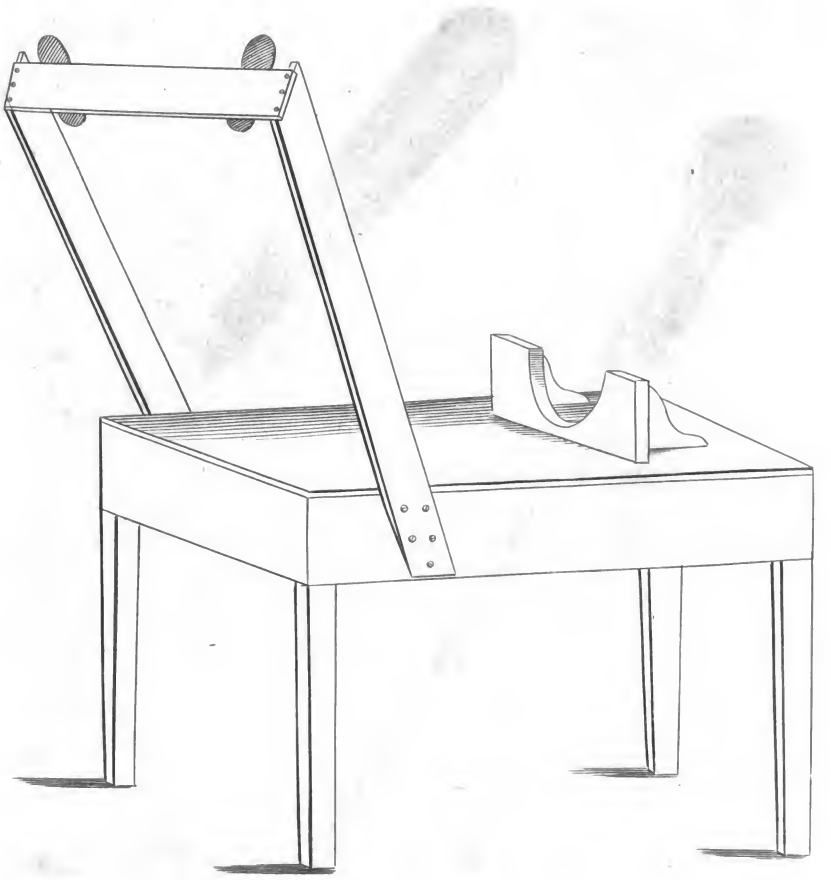

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BALTIMORE

MEDICAL AND SURGICAL JOURNAL.

ART. I. *Supplementary Observations on Lithotomy; with a description of Instruments employed by the author, and Table for the support of the patient.* By N. R. SMITH, M.D. Professor of Surgery in the University of Maryland.

PRESUMING my readers to be familiar with what has been written on the subject of lithotomy, it is my present design to offer only such observations as may illustrate the form of operation peculiar to myself, and to describe that operation. Having performed lithotomy in seventeen instances within the last six years, and (I would not say it boastfully) in every instance with complete success, I may perhaps, without arrogance, offer the results of my experience in support of such innovations as I may have made upon the modern lateral operation.

In its execution, the lateral operation of lithotomy is certainly more formidable, and perhaps more difficult than either the high or the low operation. It requires a deeper incision, and this incision is made through more important organs than are encountered in either of those operations. Nevertheless, its results are found, by abundant experience, to be far more happy, except in cases of unusually large calculus. The high operation may be executed with great facility, and that without disturbing any important organ, or incising any considerable vessel. The *immediate* danger is, indeed, trivial; but to obviate after mischief is often impossible. However careful the surgeon may be in the use of the catheter, or canula, for the evacuation of the bladder, it is impossible to keep the beak of those instruments so applied to the bas-fond of the organ as to convey off its contents as fast as they may accumulate, and we are well aware, that after lithotomy, the bladder at intervals contracts

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with spasmodic energy upon its contents, even although they may be very small, ejecting them from the wound wherever it may have been inflicted. In the high operation, the wound in the anterior part of the bladder sinks deeply into the pelvis, and assumes a position remote from the external wound. There intervenes between them much loose cellular tissue, into which urine ejected from the bladder will almost certainly infiltrate, and bathe the external surface of the peritoneum. Hence the frequent unhappy results of this operation, although improved and executed with great precision and facility by Souberbielle, Home and Carpue.

Nor has the recto-vesical operation, even in the hands of Sanson, vindicated its claims to a greater degree of confidence. Less productive, perhaps, of fatal consequences, it is nevertheless so frequently followed by a distressing form of urinary fistula, that it has almost wholly ceased to be thought of as a feasible method of removing the stone from the bladder. It is to the improvement of the lateral, or bilateral operation, therefore, that we must look for useful innovation in this department of surgery. And it is certainly unwise to rest satisfied with the improvements which may have been made in any mode of operating, while difficulties, embarrassments, and hazards are still experienced in the use of the apparatus employed.

The instrument still most frequently used by the English surgeons for the execution of the deep incision, is the gorget. I shall not at present discuss at length the merits or demerits of this instrument; suffice it to say, however, that its employment is admitted, on all hands, to be often attended with no little hazard and difficulty, and that it renders the operation complex and protracted. It requires a comparatively extensive external incision, and a careful dissection, to expose, to some extent, the membranous portion of the urethra. The form of the incision effected by the gorget is not sufficiently under the control of the operator. Every surgeon is aware of the necessity that there is for extreme care, in avoiding to entangle the beak of the gorget in any portion of the membrane, and of the propriety of incising with the scalpel the membranous portion a second time, when the operator doubts in regard to the beak's being fixed in the groove of the staff, the urethra being thus twice wounded. The plunge of the gorget into the rectum, in consequence of its slipping from the groove of the staff, has happened in the hands of eminent surgeons; and were the secrets of the grave to be revealed, it would appear, I doubt not, that similar

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injury had been more frequently inflicted upon the fundus of the bladder than is made known by the history of the operator.

In the use of the gorget, one of two evils is exceedingly liable to occur. The operator may either elevate the handle of the gorget too much, in consequence of which it may slip from the staff; or he may depress it too low, in which case it makes, at one moment, nearly a right angle with the staff, requires great force to move it along the groove, and necessarily pushes the staff very high into the angle of the pubes, where the space for its passage is so narrow that the outer angle of the gorget wounds the internal pudic artery.

In the use of the gorget the incisions are accomplished at successive periods and with different instruments; consequently, instead of there being one continuous wound from the integuments to the bladder, they want that unity which is necessary to prompt re-union.

Could the entire incision, from the integuments to the cavity of the bladder, be accomplished with one stroke of the knife, and with such precision as to render it safe, it is manifest, I think, that the wound inflicted would be one of the most simple character, and most favorable (because direct and continuous) to the easy extraction of the stone, to the unimpeded flow of urine from the bladder, (thereby in some degree obviating the danger of infiltration,) and to a rapid re-union of the divided parts.

In performing lithotomy upon a child, I have found it not difficult to reach, with the first thrust of the point of the knife, the membranous portion of the urethra, and the groove of the staff, without any preliminary dissection. The same method is sometimes practised on the adult subject, when the parts are but little obscured by fat. To attempt it, however, in a majority of instances, is evidently committing too much to manual dexterity. In executing it, it is more difficult to determine when the knife is fairly fixed in the groove of the staff, than when we first expose the membranous portion of the urethra by a previous dissection, because the instrument is more engaged in the surrounding parts. Formed as the common staff is, also, it is not easy to follow its groove with the knife, from the manner in which it is confined in the narrow wound which it makes for its own passage through the external parts. There would be great danger that the knife would loose the groove, especially in case of a deep perineum.

Nor is the groove of the common staff such as to guide the

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knife with security, or to enable the operator safely to vary the inclination of its edge in executing different parts of the incision. Being grooved directly upon its dorsum, it is manifest that when the knife approaches the prostrate gland, it cannot be horizontally inclined without danger of its being thrown out of the groove. The staff of Sir Charles Bell, grooved upon its side, is not in the least more convenient, for, although the incision of the prostrate may, by its use, be effected with more security, yet it is far more difficult to fix the point of the knife in the anterior part of the groove, and to make it pursue that part of its channel. There the knife evidently points, not to the centre of the groove, but crosses one margin and encounters the other.

Although by those confident in their dexterity, as well as good fortune, the bladder may have been occasionally reached with one thrust of the knife, yet in the use of the ordinary instruments for this purpose, the attempt certainly has too much the character of the hap-hazard plunge of Frere Jacques, which, however, when it was executed fortunately and without accident, was undoubtedly the most simple and perfect of all forms of lateral lithotomy. It has appeared to me, that could instruments be employed which would enable the operator, with safety and precision, to execute with one thrust the incision made by Frere Jacques on the dead subject, in the first instance in which Mery afterwards dissected the parts, we should have attained to the simplest and safest mode of effecting lateral lithotomy.

After several modifications of the form of the instruments, suggested by the exigencies experienced in the operation, I have at length adopted, and repeatedly employed, the apparatus represented in the accompanying plate.

I experienced, in the first place, the necessity of some appendage to the ordinary staff, which should enable me to strike the knife at once with perfect precision into the groove of the staff, however deep might be the perineum. For this purpose I added at first, to the common steel staff, the director. (fig. 1.7.) This is attached to the handle of the instrument by a strong and close hinge. It is long enough to reach the most convex part of the staff, and is bent nearly at right angles about three-fourths of an inch from its inferior extremity. It is a little arched from its hinge to its bend, that it may include the scrotum. The horizontal portion (8) which touches the staff, has a vertical groove or slit cut in it, to which the back of the knife, in making

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the incision, is to be accurately fitted, so as to glide in it with facility. Its extremity is concave, to fit the staff.

I found, however, that the groove of the common steel staff was not of such depth and form as to receive and guide the knife with sufficient security, and, at the same time, to allow the necessary variations of its inclination as it advanced. I therefore directed the shaft of my staff (1) to be made from a hollow cylinder of silver, drawn and bent precisely like a common catheter, but with walls much thicker, and of larger diameter. This was first soldered to the steel handle of the instrument, as represented in the plate. (2) In the walls of this canula, beginning just above the joint where the director touches it, I had a slit cut, extending to the beak of the staff, and in the spiral direction which corresponds to the course which I desire to give to the knife. Where the director touches the staff, this slit (3) is directly on its dorsum, and is there so wide as to expose nearly the whole diameter of the canal. But as it advances toward the point, this slit or opening in the staff, or canula, winds spirally round to its side, so that near the point of the staff, its aspect is horizontal. The groove, or hollow, of a staff thus formed, is so spacious and deep that the knife, guided as it is, must strike it at once in the deepest perineum, without the necessity of feeling cautiously for it with the point of the knife, and inflicting injury in doing so. It is also of such form and capacity as to enable the operator to vary the attitude of his knife as he advances it, and to control the form and direction of the incision. I should have remarked that the groove terminates in a cul-de-sac, which forms the extremity of the instrument.

It will be observed that the staff is more abruptly bent at the point where the director touches it than is the common instrument, and that beyond this bend it is much more straight. This is to render the channel along which the knife is to glide, more nearly continuous with the groove of the director to which the back of the knife is fitted. This form of the instrument does not in any degree render its introduction difficult.

Another appendage of the instrument, represented in the plate, (4. 5. 6.) is that which I term the index. A small cylinder of brass, about one-fourth of an inch in length, convex at one end and concave at the other, is accurately fitted to the hollow of the staff, so as to slide in it with perfect facility. The concave, or excavated end of it is to look toward the handle of the instrument, and into the centre of this end a very small steel wire is to be fixed. This wire is sufficiently long to ex-

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tend through the whole length of the instrument, becoming larger, however, in the handle of the instrument, through a canal in which it also passes, issuing at its extremity. The extremity of the wire which issues at the handle, has a small bead attached to it. The cylinder slides with facility from the beak of the staff to within half an inch of the point, where the director would touch the convexity of the staff. It is prevented from ascending higher by a small pin in the thicker part of the wire, in the handle at (5). When the knife is placed in the groove of the director, and its point thrust forward into the groove of the staff, it will enter the latter, behind the cylinder; and as it advances toward the beak, will push this before it without the least impediment. The bead at the posterior end of the wire, is so adjusted, that when the cylinder reaches the beak, the former will reach the handle, and the whole of the wire will be sheathed in the instrument, announcing to the surgeon that the knife has reached its destination.

It will be seen that the knife is also one of peculiar form. Its blade is of the length of near four inches, and is half an inch broad at the distance of three-fourths of an inch from its point. It gradually becomes narrower toward the handle. At its point, the knife is beveled on its back, so that the back presents an obtuse angle, close to the point. This angle is to be smoothly polished, for it is on this that the knife glides along the groove without allowing the point to plough into the silver. The point itself will be sufficiently raised from the bottom of the groove to strike, as it advances, the centre of the concavity in the posterior extremity of the cylinder, and thus to obtain a secure hold of it.

The blade of the knife becomes narrower towards the handle, in order that it may not be too much confined in the wound made by its point. The handle of the knife it will be seen makes an angle with the blade, of a degree to be seen in the plate. This takes the hand of the operator out of the way of the director. The handle is also large to give the operator a secure grasp.

The mode of employing these instruments is the following:—the patient being placed in the ordinary position, on the table presently to be described, the staff, the upper orifice of the canula being closed around the wire with tallow, is introduced into the bladder, the director being elevated. The stone having been felt, the director is then brought down over the scrotum, and is applied to the perineum on the left of the raphe, a little

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above the level of the anterior verge of the anus and about three-fourths of an inch, or an inch, on its left. The handle is now to be grasped by an assistant, who also, with one hand, draws upward the scrotum. The handle is to be pressed a little to the right by the assistant, in order to render its convexity the more prominent in the left side of the perineum. The operator now places two fingers of the left hand on the dorsum of the penis, and his thumb upon the director, thus obtaining a hold of the staff, by which he assists to support it, and produces a more satisfactory co-operation of his right and left hands in making his incision. He presses the director firmly down upon the point before indicated, and it will then point directly towards the membranous portion of the urethra, between the crus of the penis and the bulb. The parts pressed upon are immediately confined by the beak of the director pressed upon the dorsum of the staff, so that it is impossible when the director is once pressed down upon the perineum, that any displacement of the staff can occur, or any slipping of the parts under the knife; they are condensed and fixed in a manner peculiarly favorable to facilitate the use of the knife upon them.

The operator now takes his knife in his right hand, and applies its back to the groove in the director, giving its point a direction slightly upward. With a steady thrust the knife is then struck into the perineum and immediately enters the hollow of the staff. This is usually announced by a slight gush of urine. The operator now depresses the handle of the knife, and thus disengaging its back from the director, thrusts it along the canal of the staff, gradually inclining its edge more and more outward, till when it reaches the extremity of the instrument, its edge has almost a horizontal direction. As soon as the point of the knife has entered the canal and begins to advance along it, it encounters the cylinder of the index and carries it before it; the bead, at the extremity of the wire projecting from the handle, descending as the knife advances. This gives to the operator as satisfactory information in regard to the progress of the knife, as if it were exposed to the eye. He is also informed of its reaching its destination at the extremity of the staff.

It will be observed, that the knife, as it advances, makes an acute angle with the staff, which angle, however, may be varied at the will of the surgeon. From this circumstance, and from the form of the knife, it results that the anterior part of the wound in the prostate, is broader than the posterior where it

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enters the bladder, and where the parts are more susceptible of dilatation than at any other portion of the deep incision.

The surgeon now proceeds to withdraw the knife, and at the same moment to effect the dilatation of the wound, especially the external portion of it. This he effects by withdrawing the knife, and at the same moment disengaging its point from the canal of the staff. At the moment of commencing to withdraw the knife, he will press its edge gently outward; but as it approaches the external part of the incision, he will dilate with more freedom outward and downward, in a direction parallel to the ramus of the ischium, thus easily avoiding to inflict any injury upon the internal pudic artery. The extent of the incision will of course be determined by the supposed magnitude of the stone about to be extracted. As soon as the knife has been withdrawn, the surgeon introduces his finger along the staff into the bladder; and if he finds that he can reach and distingush the opening in the bladder and touches the stone, he may immediately withdraw the staff. I have never experienced the slightest difficulty in introducing the forceps into the bladder without any other director than the finger; and indeed, when they are introduced, the wound should not be occupied with any other instrument.

In case I find it necessary, on encountering a large stone, to dilate the wound after the first use of the knife, I prefer to employ the bistoire cachet.

It is justly remarked by Mr. McFarlane of Glasgow, in his late Surgical Reports, that the extraction of the stone, after the incisions have been completed, is often the most difficult, embarrassing and dangerous part of the operation. At the moment that the cut is made the bladder empties itself, contracts upon the stone, and usually brings it into the vicinity of the internal wound. I am confident from what I have witnessed and experienced, that it is a common error, not to advert to the fact that now there is no cavity in the bladder, except that occupied by the stone, and that the stone is close to the wound. The surgeon, therefore, on introducing his forceps into the bladder, often in his eagerness to complete the operation, pushes them beyond the stone, dilating any portion of the bladder which the instrument may encounter, leaving that part in which the stone is lodged pursed around that body, and causing it to appear to be encysted. Perhaps the operator, supposing the stone to be in the bas-fond of the bladder, urges the forceps in that direction. Perhaps he touches the foreign body, and feeling it elude his grasp, pursues

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it still deeper. During this time, however, the stone is closely embraced by the unexpanded portion of the bladder near the wound and over the pubes. The operator frequently opens his forceps and ineffectually endeavors to seize the stone; in doing so, he so expands that portion of the organ as to suck blood into its cavity, and also air, causing by the agitation of the fluid and air, the sound which has recently been called, with more precision than elegance, "the horrid *squash* of the forceps in the wound." The blood coagulates in this portion of the bladder, and upon the rough surface of the stone where it is exposed to the lateral contact of the forceps, so that for a time perhaps it is no longer felt. I do not doubt, that often, by the continued pressure of the forceps upon one particular region of the bladder, its fibres then become in a degree paralysed, while still another portion remains closed around the stone. Here we have then a stone caused to be temporarily encysted by the very efforts which are made to extract it. I am persuaded, that I have perused the reports of many operations in which these errors have been committed, and these difficulties encountered, and in this I shall not be condemned as uncharitable, when I admit that I have myself committed the former and experienced the latter, and therefore have the best of evidence that they may occur. Many of the cases pronounced to be those of encysted calculus, are by no means such, although nearly all the difficulties of extracting an encysted stone are encountered.

The embarrassment above described, often in part arises from the employment of forceps which are far too long for the purpose intended. In no one of the cases in which I have operated, have I ever failed in touching the calculus with the point of the finger, on withdrawing the knife; consequently when free in the bladder, it must be lodged near to the prostate gland. To seize it then, we require the forceps to be introduced, in the deepest perineum, but little further than the length of the finger, and just within the wound of the bladder. It is manifest, that the most favorable seizure of the stone is with the very extremity of the blades. I have always succeeded best in the extraction of the calculus, even on the adult, with a pair of forceps designed for boys, the whole length of which is not more than six inches. I have sometimes thought that it would be well to have attached to one of the handles of the forceps, a species of sliding guard, which should prevent their entering beyond a certain depth.

It must certainly be a very desirable object, when we feel the

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stone lodged just at the internal wound, to prevent its receding before the forceps. Could we fix it there by any support from behind, it is manifest that we should be able to grasp it with little difficulty, and without the necessity of groping for it in the recesses of the bladder into which it may be received.

I have recently, in an exceedingly interesting case, which I design at a future time to report more fully, encountered extreme difficulty in extracting a calculus which was truly encysted, and that in the most embarrassing manner. The highly respectable gentleman who was the subject, had suffered equivocal symptoms of stone for more than four years. Some of the most characteristic had, however, always been absent, there having been never any sudden suppression of urine, as if by any foreign substance rolling against the internal orifice of the urethra. No stone could be detected by the finger in the rectum, although a tumor was obscurely felt, apparently in the situation of the left vesicula seminalis. There was, however, much irritability of the bladder, and much spasmodic effort on the part of this organ and the abdominal muscles, as if to disgorge some foreign substance lodged in the bladder. These efforts occurred at intervals varying from one to four hours, and latterly had been accompanied with prolapsus ani. The patient could not lie on the right side in consequence of a dragging sensation which he experienced on the left side of the bladder. He experienced the peculiar pain in the glans penis in a high degree. The urine deposited small quantities of the pulverulent phosphates.

This gentleman had been repeatedly sounded for stone before he became my patient, and not the slightest evidence of its presence had been obtained. When he became my patient therefore, there prevailed a strong conviction that no stone was present. I sounded him, however, with the catheter, (but I confess not with that care in relation to stone which I should have used,) and found nothing. Subsequently the symptoms indicating stone became more characteristic; he felt, on one occasion, something like the movement of a foreign body in the bladder, and a sudden obstruction to the flow of urine, and the spasmodic efforts of the bladder became more urgent. These circumstances induced me to propose another examination, in which I readily detected the presence of a stone, apparently situated near the prostate gland. As the water was ejected at the moment of sounding, and as the bladder was incapable of containing any considerable quantity of urine, the stone would

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of course be brought into this situation by the contraction of the bladder, even although a portion might be encysted.

A few days after this I performed the operation for its removal. On introducing the staff, the escape of urine being prevented by the tape, and the bladder being a little distended, I did not instantly strike the calculus; but moving it from side to side, I presently struck it in the left side of the bladder, and then it occurred to me, that it might be encysted in that region. I made my incision, introduced my finger into the wound, and the bladder having emptied itself, with great difficulty could barely touch the stone with its point. Having introduced the forceps and made several efforts to seize the stone, I found to my extreme disappointment that it constantly eluded my grasp, the forceps appearing only partially to grasp its convex extremity and to slip from it at every effort to close upon it. I changed my instrument several times, but found a small curved forceps to be that with which I could most effectually reach the calculus. I found it necessary to turn the blades abruptly to the left on passing the prostate, or I could not even touch the stone. Much time was spent in these ineffectual endeavors, the patient in the mean time suffering extremely. I from time to time employed the finger in the rectum, but could not in the slightest degree command the stone with it. Could I have reached a little further, I could have accomplished the object without difficulty, and I felt that I would have given the world for a finger two inches longer. At length the irritation inflicted upon the bladder, excited powerful propulsive efforts on the part of the abdominal muscles, and produced an action upon the bladder like parturient efforts, the whole organ being brought into more close proximity to the wound, and the stone being made to present itself at the inner strait. I then distinctly felt the calculus to be lodged in a cyst, on the left side of the bladder and probably in the expanded orifice of the ureter. I found it to be of an oval shape, and that one of its extremities projected from the cavity. I found also that it was imbedded in a gelatinous or lymph-like matter, such as frequently attaches a rough stone to the walls of the bladder.

With the finger I now proceeded to effect it partial dislodgement, and in a short time so succeeded, that I was enabled to insinuate the blades of the small forceps into the pocket, and finally to grasp it securely and to extract it without much further difficulty. I should have stated, that I had occasion, while endeavoring to seize the stone, to enlarge the wound with the bistoire

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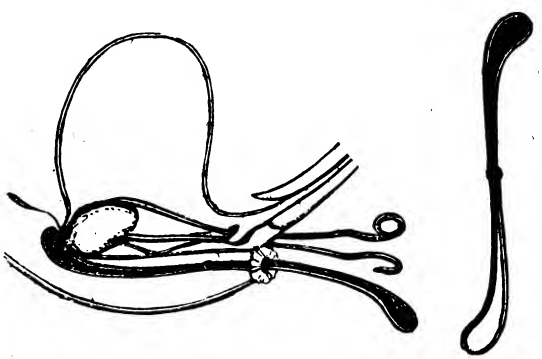
cachet, for the purpose of enabling me to direct the forceps with more facility.

Since this operation, I have devised an instrument, which I am confident will greatly assist me in all cases where there is the least embarrassment in extracting the stone, and especially when it happens to be encysted. In children it is not a difficult matter to pass two fingers into the rectum, beyond the stone, and so to grasp it as to press it firmly into the perineum, and cause it to make a tumor in that region. This, indeed, is always practised in the apparatus minor of Celsus. Could the stone be made thus to present at the wound in the adult, and be securely fixed in its position, so as not to be thrust back by the vain attempts to seize it with the forceps, or to allow the forceps to pass beyond it, it could not fail greatly to assist the efforts of the operator in the use of the forceps.

In the difficult case just related, I am confident that had I been provided with such an instrument as I am about to describe under the name of the rectum-lever, I should have experienced comparatively but little difficulty in the extraction of the stone. The instrument to which I allude, is represented in the accompanying cut,



and is designed to perform the office executed by the fingers in the apparatus minor. The drawing will in a great measure supersede the necessity of minute description. It is formed of two steel shafts, each twelve inches in length. These are united to each other in the centre by a hinge, and from this toward each extremity, they curve outward and then inward, (more abruptly toward the point,) so that the two points at each extremity meet each other, and thus give to the end of the instrument a form similar to that of the handle of a large spoon, and about an inch and a quarter broad. Where the ends of the

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wires meet, a socket, one-third of an inch deep, should be made in one, and the other be made to fit into it, so that by compressing them, the instrument is made narrower, while by the action of the hinge the other extremity will be expanded and made wider. Each extremity is now to be bent laterally in a degree a little greater than that of the handle of a common spoon, and then to be covered with gum elastic to the extent of two inches from the end. To introduce the instrument into the rectum, it is necessary to compress its arms at one extremity, when it may be conveyed with care into the rectum and behind the bladder, as represented in the cut. The external extremity, which is now the handle, is then to be compressed, when the arms of the internal will open, and cause the instrument to present a broader surface toward the stone, the gum elastic yielding to receive it. The situation of the calculus having been carefully ascertained, the instrument in the rectum is to be conveyed behind it, and then the handle being depressed, and at the same time brought forward, the stone is hooked downward close to the wound, the rectum and bladder readily yielding to the pressure. If the first attempt does not secure it, the second or third certainly will, as by two or three efforts we can, in succession, bring forward every region of the bladder. The stone being thus fixed, is to be held steadily, and gently pressed toward the wound, while the operator with his right index in the cut, feels its form and situation. The forceps are now to be introduced by the right hand of the surgeon, while, with the left, he holds the stone with the rectum-lever. Thus is he enabled to co-operate with his two hands to great advantage, pressing the stone forward into the grasp of the forceps, at the same moment that he expands the blades. Besides, with the lever he indicates the very position of the stone, and applies his forceps to it with precision. Having the stone supported by the lever, the surgeon may also have it in his power to explore it with his finger, and to determine with precision its form and position, and should it not present favorably, so as to be seized by the forceps in the manner to render its extraction most easy, he may with facility alter its presentation, and if it be oblong, bring one of its extremities into the wound.

But the lever not only assists the surgeon to find and to seize securely the stone, it may greatly aid him in his efforts to extract it. While he makes the necessary degree of traction with the forceps, he may at the same moment, gently press the stone forward with the lever. The instrument being covered with elastic gum

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of considerable thickness, and thus having nearly the softness of the finger, will not in any degree contuse the rectum and bladder upon the stone, unless the operator uses improper force with it.

I am persuaded that the lever might be employed with great advantage, in all cases in which the operator is not able on the first introduction of the forceps, at once to seize the stone. Indeed, were the lever introduced in every case, previous to the introduction of the forceps, I do not doubt that the average duration of the operation would be much abbreviated.

Perhaps it may not be amiss to report here the result of my experience in regard to after-treatment. At the present time, the practice of introducing the gum elastic canula along the wound into the bladder, for the purpose of conducting off the urine, appears to meet with general approbation. I have the strongest conviction, however, that such a practice is fraught with danger. How is it possible, let me ask, that the beak of such an instrument can so occupy the bladder as to convey off all the urine which is poured into it? more or less must certainly accumulate below it, and as the instrument is not expected to *cork* the wound, must necessarily be ejected around it into the cut, and be obstructed in its escape by the presence of the instrument. However smooth and well adapted the tube may be, it is nevertheless a foreign substance in the wound, and as such must create irritation, and especially where it enters the bladder. This organ is always impatient of any hard substance, and will make efforts to expel it; witness its unavailing spasm while stone exists, and also its efforts to expel the calculus by the wound, when, after the operation, the surgeon ineffectually attempts its removal, causing it after some hours to be spontaneously discharged. Sometimes, for this reason, the operation is performed "a deux temps," the operator waiting after the incision, till the stone is brought down by the action of the bladder. Precisely in the same manner will the bladder be irritated by the presence of the beak of the tube, and will make the same efforts to expel it. In these efforts it may be expected to succeed, so far as to thrust the beak of the instrument without the bladder, when it becomes involved in the cellular tissue exterior to the prostate, and acts the part of a plug to obstruct the escape of urine and of blood. In *one* instance I employed the canula, but it immediately gave rise to such a degree of irritation that I yielded to the importunities of the patient and removed it. In the several instances in which I have performed

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lithotomy, there has occurred no alarming obstruction of the wound from coagula, except in one instance, and then mischief was obviated by the introduction of the finger.

It has been my uniform practice, after the extraction of the stone, to place my patient in bed without any kind of dressing whatever; being careful, however, to incline his bed so that the lower part of the trunk shall be the most depending. I allow him in other respects to assume whatever position of body he finds least painful.

In the accompanying plate will be seen a representation of an improved table for the support of the patient, which I have used in all my recent operations with much satisfaction. It is a small and strong table, four feet long and two feet wide, and of the ordinary height. Within two or three inches of one extremity of this table, on each side, there is attached an arm of plank, of a size convenient to be grasped by the hand, and about three feet and four inches long. These are let into the margin of the leaf of the table, and screwed firmly to the frame. They are oblique, projecting outward and forward in the degree represented in the plate. The extremities are sawed off obliquely, in a direction downward and forward. To these margins a cross-bar three inches wide is screwed, one of its flat surfaces looking towards the centre of the table. To this cross-bar which will be wider than the table, two shoes or slippers are to be nailed, and they should be, for an adult, about two feet and ten inches above the table. The bar, however, may be so attached by thumb-screws, as to enable us to elevate or depress it at pleasure. The shoes should be about two feet and three-fourths apart, and should have the toes turning a little out. A piece of plank seven inches wide is now to be attached transversely to the table, and by its edge; so as to make a kind of partition upon it, two feet four inches from its foot. A semicircular piece is to be cut out of its upper margin, six inches in diameter. This may be made more firm by braces, as seen in the plate. The whole of this part may also be made to shift, and to be fixed at different distances on the table, to suit persons of different stature. The semicircular notch in the vertical plank, is to receive the neck of the patient, and the plank on each side will sustain the shoulders and prevent the patient from thrusting his body upward upon the table. Pillows are to be placed on each side of this notch, to prevent hurtful pressure, and the table, towards the foot, is to be covered with several thicknesses of blanket.

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In placing the patient upon the table, his nates should slightly project over its foot; his neck is received into the semicircular notch, and his shoulders are applied to the sides of it, as a kind of yoke. His feet are now to be elevated and placed in the shoes, where they are to be secured by handkerchiefs. With his hands the patient grasps the arms at a convenient height. Thus is he placed in a most secure and convenient position, without being under the painful constraint of the usual method. Indeed, if any one will make the experiment of placing himself in the two attitudes, he will discover that the difference is very great. When the hands are bound to the feet in the usual way, the patient's limbs have no support except from the constricting bands, and from the hands of assistants. He has no power to support himself by any muscular effort. Cramps, caused by his confined position, sometimes seize his limbs, and double the agony of the operation. But on the table here represented, he braces his feet firmly against the bar; he grasps the arms with his hands, and may relieve himself by muscular effort without power to displace his body, or to interfere with the duty of the surgeon. Assistants support his knees on each side of the table, while the surgeon has ample room between the arms of the table, to proceed with his manipulations undisturbed.

The last gentleman on whom I operated, and whose case I have alluded to, was an intelligent physician, and he assured me that it would have been absolutely impossible for him to have endured the usual confinement for the length of time necessary to effect the extraction of the stone. Before I used the table here described, my patients used to complain as much of the confinement as of the operation; but now they do not complain of it at all. They may even remain in the attitude required for the operation, till hemorrhage has chiefly ceased, before they are placed in bed.

N. B.—The staff which I have described bears some resemblance to the catheter of Guerin, represented in Velpeau's Surgery. Chesselden, also, at one time employed an external director. In the construction of this I had neither of those instruments in view, and it will be seen that it materially differs from both of them.

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ART. II. *Remarks on a Method of effecting Delivery in cases of deformed Pelvis.* By CH. D. MEIGS, M.D. Lecturer on Midwifery, &c. Philadelphia.

In cases where the diameters of the pelvis have been so much diminished by rachitis or mollities ossium, as to render the descent of the fœtal head impracticable, it has been the universal custom either to perform gastrotomy, or to lessen the size of the cranium by evacuating its contents, and then make extraction by means of the sharp crotchet.

The method last spoken of is a good one, perhaps, and succeeds well enough where the diminution of the pelvic passages is not too considerable: nevertheless, we find, upon reference to the records, that a great many women have been the victims of such untoward labors, owing, measurably, to the violence done to the soft parts during the forcible extraction of the head, which was, perhaps, insufficiently reduced in size to admit of its transmission with safety to the mother—and probably in no less degree to the wounds that have been inflicted by the slipping of the crotchet,—a very common, and often unavoidable accident in its employment.

The firm bony structure, composing the base of the fœtal skull, is nearly two inches and a half in its transverse or smallest diameter; mere excerebration, therefore, cannot be regarded as furnishing a good security against fatal contusions from the forcible extraction of such a body from a pelvis whose smallest diameter is not exceeding two inches in length. Such a body as the base of the skull, must, in order to pass through such a pelvis, present itself in an inclined attitude, or with a dip, but this dip or inclination can be but imperfectly communicated to it whilst all the bones of the cranium retain their connection with each other. To enable such a base to pass downwards safely, the skull ought to be taken to pieces, and those pieces removed in succession. In some instances, this successive ablation of the cranial bones has been effected by the crotchet, the point of which was used to pick out the bones, sometimes in portions not larger than the finger nails; as for example, in Elizabeth Sherwood's labor, so impressively narrated by Dr. Osborne. Those who have perused that account, will remember the extreme perplexity of that practitioner, and the infinite pains he took in his anxiety to avoid injuring her with the crotchet. He could not get the base of the cranium down until he had removed all the rest of the head.

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Having had occasion to observe the difficulties and perplexities arising from labor in deformed pelvis, as they occurred in Mrs. M. R. of this city, whom I have now delivered in two accouchements, I venture to lay before my professional brethren, with great deference for the judgment of older and more experienced men, the impressions I derived from observing and conducting those two labors.

There is reason to believe that no other female has ever been safely delivered in this country, under the disadvantages of a pelvis measuring only two inches from sacram to pubis, which, by the judgment of persons of the highest claims to confidence, is the extent in Mrs. R's case. I speak this, however, under liability to correction. Those who may feel interested in the details of Mrs. R's first labor, are respectfully referred to an account of it from the pen of Dr. George Fox, contained in the North American Medical and Surgical Journal, for October, 1831. It will be found upon such reference being made, that all the gentlemen then consulted, agreed that the diameter was as above mentioned.

Her second accouchement took place in the month of ——— last, the child having reached the full term of utero-gestation, an event which I greatly deprecated, having vainly urged, with the advice of Dr. Dewees, the operation for inducing premature delivery.

The experience I had acquired in delivering her in the first labor, convinced me that the crotchet was not to be relied upon in her case; not only because of the danger from contusion in extracting the skull, and from wounds made by the point of the crotchet, but also from the loss of time requisite for picking out the head bit by bit. The patient had almost fallen a victim to exhaustion in the first instance.

In reflecting upon the facts that had occurred in 1831, I found that the problem about to be solved in the second labor, was not that a head being retained above a pelvis too small to transmit it, to extract said head, but the question was to extract said head with the smallest loss of time, and least possible risk to the mother. I had already ascertained that the Cæsarian operation would not be submitted to.

I supposed that the head might be four inches in its bi-parietal diameter,* and I knew that the pelvis was only two inches. Under such circumstances the vertex will not present, but the

*I have measured many heads of children immediately after birth, that were four inches in the transverse diameter.

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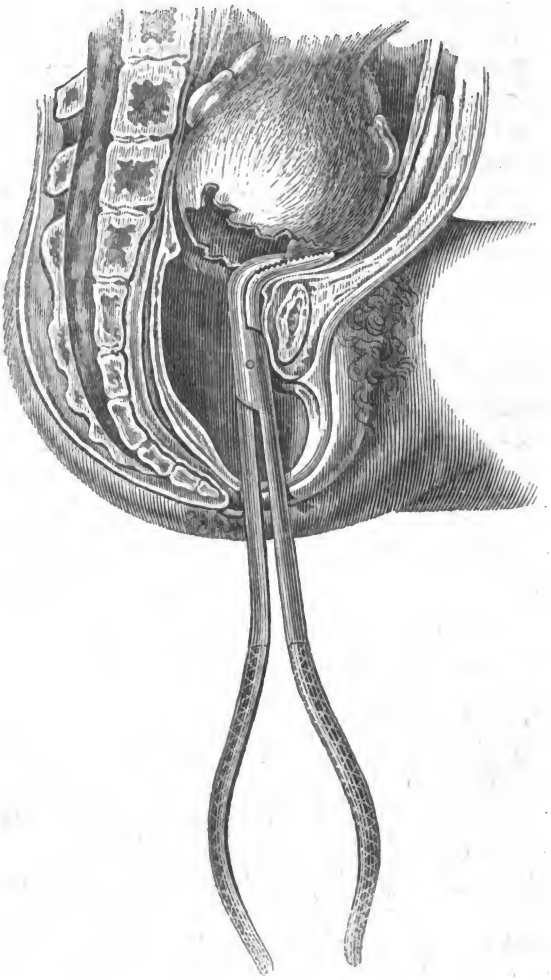
crown of the head will be the presenting part: but since the cranium cannot recede farther than is necessary to bring it in close contact with the posterior part of the mother's abdomen, there will be two inches of the head lying upon the plane of the superior strait, and two other inches projecting in front of the symphisis pubis. Or, in other words, the crown of the head will repose upon the top of the symphisis pubis—part of the head being behind, and part in front of that bone.



This is well illustrated in the accompanying figure, which was drawn by Mr. Wm. Mason, and cut by Mr. F. Gilbert, of this city.

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This wood cut is also intended to exhibit a very important principle in the management of such a case, which is, that all that part of the cranium which lies in contact with the mother's back, is perpendicular to the opening of the strait, and may, when the skull has been opened, be seized with a straight forceps or pliers, like that represented in the second wood cut; whereas, all that part of the skull that lies horizontally over the opening can be taken hold of with a curved forceps or pliers, as is seen in the figure.

I have found, upon applying the test of practice, that when the thin portions of the cranial structure are taken hold of, either with the straight or curved forceps, they can be broken up with great ease, and removed with sufficient celerity; so much, indeed, that a head may be reduced to a very small remainder in a short time. I believe that if early arrangements are made for delivering the patient by this method, no danger will exist of exhaustion or excessive constitutional irritation being produced, before the extraction of the fœtus can be completed.

From the foregoing remarks, it seems to be very clear, that the practitioner, in undertaking to deliver a patient with excessive distortion of the pelvis, ought to proceed to his operation with a full understanding, that after perforation he is to remove all the posterior parts of the presentation, with the straight pliers, and all the anterior and lateral ones, with the curved pliers; making attempts, from time to time, to draw the head down, as he finds reason to believe that it is sufficiently broken up. Such are my views of the mode that ought to be adopted. I at least, am fully of opinion, that Mrs. R. could not have been rescued by me, had I relied only upon the crotchet for her delivery.

I shall close this communication, after I shall have added a few remarks concerning the time that ought to be selected for commencing the attempt to deliver. It is proper to observe, that females suffer less in the first hours of labor, in which the head cannot engage, than in those wherein the head sinks early into the excavation. This depends upon a well known principle, viz: that the contractions of the womb are violent and powerful in proportion as that organ becomes smaller or more condensed. If the head becomes arrested in the excavation, and particularly after having escaped from the uterine cavity, it is urged with great power upon the tissues, which resist its further descent. Under such circumstances, constitutional irritation is

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rapidly developed; whereas, under the more lenient exertions of the uterus, while the entire fœtus is contained in its cavity, not only is the impulsion of the head against the resisting tissues far more moderate, but in the intervals of the pains no pressure exists. Hence a woman remains long in labor, with little constitutional disturbance, in the kind of cases I am discussing. These observations are illustrated, and their truth confirmed, by reference to some of the most celebrated examples of such labors, which are recorded in the books.

Whenever, therefore, a woman is fallen in labor, who is known to have an impracticable pelvis, and in whom the Cæsarian operation is rejected—if the perforator is to be resorted to, it should be applied as soon as possible, in order that, the child having ceased to exist, all the facilities to be derived from incipient decomposition of the fœtus may be enjoyed. Twenty-four hours after the death of the fœtus, the firmness and cohesion of its soft parts is so much lessened by maceration, in an elevated temperature, equal probably to 99°, that the extraction of the pieces of bone is exceedingly easy. I should, therefore, recommend that all attempts to deliver should be delayed, if possible, for twenty-four hours after the perforation of the head. This recommendation is founded on what I experienced of difficulty in getting out the portions of bone after I had broken them up, when I made the attempt antecedently to the occurrence of symptoms of decomposition. The patient can be quieted with anodynes, and supported with light nourishment, and if needful may, by venesection and cold drinks, be kept tolerably free from vascular disturbance during the whole period of such delay as may be deemed advisable.

The cut which I subjoin shews the form of the perforator which I employed in Mrs. R's case. It is a trocar or drill, ten inches in length from the handle to the point. I was obliged to make use of such a means of penetrating the skull, since no suture was practicable, and the common Smellie's scissors could not be made to perforate the solid bone, any direct pressure causing the head to roll, or move upwards, and any rotatory or drill like motion with it being impossible without great danger of wounding the lips of the os uteri. The same cut exhibits both the straight and curved pliers. They are eleven inches in length, the sides of the mandibles are rounded, and the gripe is serrated in order that they may not pinch any tissues except those intended to be included in the bite, which, on account of the serræ, is very sure.

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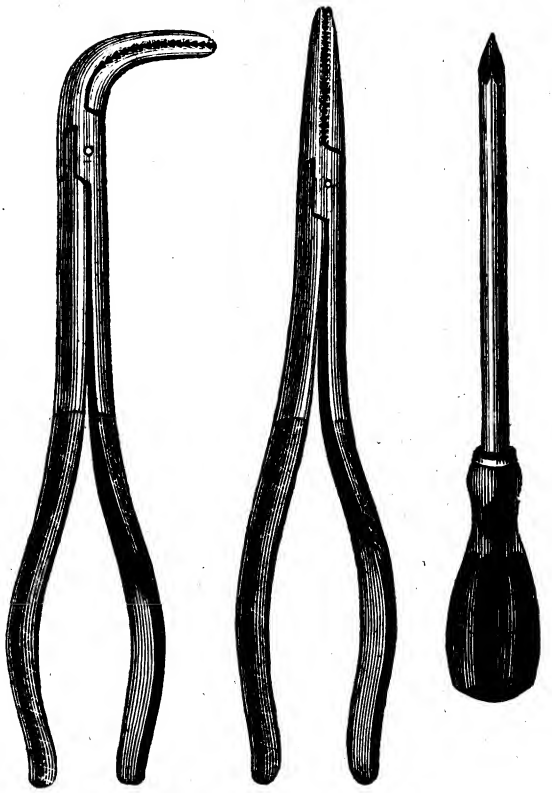

I have never seen Baudelocque's (the younger) instrument, *pour broyer la tête.* Dr. Davis' craniotomist, and his craniotomy forceps, were found incapable of useful application, upon several attempts that I made to use them in my cases.

Philadelphia, Dec. 6, 1833.

ART. III. *On the Nature of the Disease improperly termed Delirium Tremens or Mania á Potu.* By ALEX. L. BARON, M.D. Physician to the Charleston Marine Hospital.

THE able, original, and highly gifted Broussais, in his Examen des Doctrines, vol. 3, p. 208, in speaking of the actual state of medicine in England, in 1821, has taken occasion to say that the English have invented a new disease under the name of delirium tremens. He acknowledges that he is aware of certain degrees of erethismatic symptoms being developed

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in nervous and lymphatic constitutions by the abuse of alcoholic liquors; and denies that while these symptoms existed, any degree of gastro-enteritic disease was shewn to accompany them. In continuation, he observes that it is important, that this last inflammation should be pointed out, in order that the physician might not exasperate the same by the exhibition of irritating medicaments, or excite this gastrite with convulsive symptoms.

Perhaps the same severe strictures are strictly applicable to the doctrines and practice in this form of disease in our own country; and in our own city, we have had occasion to observe the contracted views, and of necessity the limited application of therapeutic agency for its relief. Our object is not to compile a learned essay, but simply to offer a few general remarks, in the hope of throwing some light on its apparent obscurity; while we feel warranted in so doing by the experience we have had in hospital practice, amongst sailors principally, for the two past years, amply corroborative of our own views, having directed our investigations to the same, for that time, with great care.

We believe that the disease in the first instance is purely a gastritis, which in process of time, becomes complicated with decidedly appreciable cerebral affection. We offer a few observations as to the disease in its primary stage, before treating of its cerebral complications, which we design to be the principal object of this paper.

We say that the disease is primarily a gastritis, and for these reasons: The immediate impressions made on the lining membrane of the stomach, by ingesta taken, are appreciable in various degrees, from the seemingly healthy excitement, resulting from appeased hunger, through all its forms, up to the more violent grades of inflammation and disorganization. In every case, a greater or less afflux of vital fluid is determined to the organ, while the whole digestive apparatus participates in this active vital erection. The impression at first made on the sentient nervous extremities, is so instituted, that, from the direct or indirect communication with other organs auxiliary to the faithful performance of the digestive function, of its own seat, it must be variously felt by all. Hence the salivary glands of the mouth, the muciparous of the pharynx and œsophagus contribute their fluids; the stomach pours out its secretion; (if it can be so termed,) the liver and pancreas, &c. theirs. The circulatory apparatus is more or less excited, and as it subsides the absorbent power is set in motion. Every cir-

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cumstance indicates both general and local excitation. Each and all perceive the irritation, and were this to continue, as excited only by such articles as subserve the gratification of the natural, healthy appetite so termed, the same consequences would ensue, were they extravagantly stimulated by the gratification of the unnatural or artificial appetite, viz: a diminution of the vitality and usefulness of the organs, in spite of all that the appropriate systems could effect in the way of reparation, but with this difference, that these consequences would result in a shorter period of time in proportion as the more rapid or greater stimulation from artificial gratification were practised. We assent with readiness to the biblical truth, that man is born in sin; while without hesitation or reluctance, we subscribe to the opinion that he is equally born in disease. That from the moment of his birth, nay prior to that event, the seal of unhealthfulness has been affixed. And we consider this gradual wasting away in process of time, of the vitality of the system, the result of the gratification of the natural wants, as much and as strictly a state of disease,—an unhealthy condition, as that which more speedily ensues from extravagant stimulation. But whether this be true or not as to the first, it cannot be denied as to the last. The reception into the stomach then, of other than necessary food and drink, must in every case exasperate this gradual decay, exciting an unnecessary afflux of vital fluids, and establishing an extra vital erection of the tissues. Each is excited in a greater degree than is necessary to the functional performances of the organ. The greater, however, this frequency and the degree of erection is, will the alteration of structure and functional derangement be; and in proportion as this is persisted in for a longer or a shorter period of time, will be the degree of disorganization induced. This needs no explanation. But how is this change from normal to abnormal wrought? The vessels through which this afflux takes place, become enlarged from frequent distension; the sentient extremities of the nerves acquire more or less activity and capacity for perception; and we have at once great turgescence and engorgement of the vascular, and extreme sensibility of the nervous apparatus. Now were this state of things modified by remedial agency, or the abandonment of stimulation, an amendment and gradual subsidence, would in all probability ensue. It is, however, allowed to progress; stimulation after stimulation is practised; no time is allowed for recovery of tone or functional ability; inflammation at first slight, is established; it

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in turn progresses; a change of structure is commenced; interstitial deposites are made, for absorption is retarded in proportion as an arterial action is increased; the coats of the vessels become thickened; their mobility lessened; sensibility is rendered more intense. By a repetition of the stimulus a greater degree of inflammation is established, an exasperation of all these morbid effects takes place, all the organs are effected in an equal degree, and at their head the brain and nerves generally, and total disorganization follows with idiocy, paralysis and death. We have here then a gradual progression from the least shade of irritation, to the fatal establishment of decided inflammation and disorganization. We presume that no one will deny then, that when these several successive degrees are evidenced by decided outward manifestations, gastric inflammation can be, and certainly has been proved to exist. Such are the consequences which follow the abuse of alcoholic draughts. But the same results attend stimulation from any other stimulant taken into the stomach. This gradual progression from inappreciable to decidedly evident, is amply corroborated by the experience of any and every debauchee. The inexperienced adventurer in the art of inebriation, who acknowledges the potency of his first draught, when his unconscious brain ceases to perform, or performs erroneously its accustomed office, demonstrates the fact with positive certainty; while the hardy veteran in the act of bowing his disgraced and addled senses to the influence of his fifth or sixth, equally confesses the same. But what are the evidences of these alterations being undergone? We refer the reader to the reddened swollen tongue, with its vermillion tip and edges, and prominent painful papillæ at first, and subsequently to the broad, flabby, smooth, and wrinkled member, (for we have universally observed this last in confirmed drunkards) to the injected mucous membranes throughout their entire extent, the heated mouth, the thirst, nausea, retching, headach and inappetency—to the red and suffused conjunctivæ, the dry, harsh and pimply skin, all alike decided evidences of certain degrees of gastric disorder, and invariably to be found after a debauch; and conviction must follow, if forsooth he has or has not faith in symptomatology. Now, whether these be only perceptible to the medical practitioner in the first instance or not, they nevertheless undoubtedly exist, and sooner or later become too decided to be passed unheeded by the most casual observer.

This irritation, however, which at first may occasion only slight gastric uneasiness, and which by abandonment of stimu-

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lation, would by an effort of nature relieve itself; will, as certainly, if uncontrolled and exasperated, eventuate in confirmed gastric inflammation. The relief so commonly sought for and obtained, for the first unpleasant distress, by recourse to the bottle, is confirmatory at least of the existence of a decided shade of irritation or inflammation. No pathological fact is better established than this, that a lesser irritation may be masked, and concealed by the substitution in its place of a greater; and it is in obedience to this law, that the morning potation of the drunkard assuages temporarily. After the same manner, do we explain the action of the sinapism, blister and moxa, in chronic or sub-inflammatory rheumatism, or the same applications in cases of pleuritic inflammation. Yet if the potation be not superseded by abstinence, or other depletory means, have we not abundant testimony corroborative of the fact, that it engenders a new shade of irritation, an increased appetite for the draught, which in its turn demands a repetition of the stimulant? And do we not daily see that this repetition if practised, inevitably exasperates the gastric phenomena. So also is it the case with the pleuritic and rheumatic inflammation. We see no wise practitioner relying solely on his counter irritants and revulsives, independently of a resort to depletives.

But we have only to follow the drunkard through all his various stages to be convinced, that in each of these, from the first to the last, there exists irritation and inflammation in all its degrees. And if this does not suffice, let the unprejudiced investigator of human maladies, but refer to the numerous instances of relief afforded by abstinence and the depletive course,—to him that is not so infatuated by the sweets or rather bitters of intoxication, as to neglect their use; and then turn his attention to the post mortem examinations of the stomachs of such as have fallen victims to this blind neglect, and witness there the softening, induration, and reduction into the gelatinous mass—the disappearance of the cellular texture, the thickening of coats and vascular injections—the tumefactions, scirrhus, and ulcerations, and indeed all the various disorganizations and decompositions which the much abused science of pathological anatomy unfolds; and if he be not amply satisfied that inflammation may and has existed, in all its forms, from mild and inappreciable, to violent and undeniable, as the result of this abuse of alcoholic or other stimulants, then indeed is the quotation applicable to him especially,

"Visu carentem, magna pars veri latet."

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We have then an irritation or inflammation established in the coats of the stomach of a more or less grave character. But although in the less advanced stages the disease is essentially a gastritis, still it does not, if the stimulation be prolonged, terminate as such without implicating in a greater or less degree the cerebral functions. Although the stomach primarily irritated, may for a time suffer congestion and disorganization partially, still the brain to which this irritation may be transmitted, may not perceive it in such intensity as to partake of this congestion and disorganization, as we see in cases of death from cholera, pulmonary apoplexy, and rapid pneumonia. Yet in process of time it does perceive it, and that sensibly too. It is of this complication and its effects that we design principally to treat.

To use an aphorism of Broussais applicable to our subject, not the less true than evident, we believe that sanguineous congestions of the stomach in drunkenness, in typhus, in fevers mali moris, &c. are necessarily repeated in the brain and its membranes. Now whether we believe in the doctrine of specific irritations or not, whether it be by the medium of the sympathies that irritations are transmitted or not, or whether during the transmission, irritations are changed in their essential character or not, it boots us little in this matter to inquire. That irritations once established in the mucous membrane of the stomach, are transmitted to the brain, and particularly such as originate from abuse of alcoholic liquors, is undeniable. The stomach can be the only medium through which this transmission is effected, and the rapidity with which it is made depends for the most part on the susceptibility of the stomach,—which in its turn depends on the degree of stimulation and the length of time that the same has been practised, as well as on the general constitutional irritability of the system. Thus in the habitually silent phlegmatic, we shall have substituted by the draught, volubility and vivacity of spirits; while in the irritable talkative *nerveux*, we will have exhibited an approach to frenzy and violent muscular action. And each of these substitutions will be greater or less in proportion to the degree of stimulation practised. The impression is first perceived by the sentient extremities of the nervous expansions, and they are the common medium through which the stimulation is felt by both mucous membranes and brain. But it has been contended that a direct detraction from the nervous power,—a decided lessening and debilitation of nervous energy, is the primary and incipient effect wrought by the stimulant, as a means of explaining the action of alcoholic stimulants. We

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confess we see here only a contradiction. Accustomed to be guided by common sense conviction, we find it difficult indeed to arrive at the conclusion, that an article essentially and universally allowed by experience, to be of a highly stimulant character, can ever produce in its immediate primary effect a debilitant operation. We recognize on the contrary a decidedly stimulant operation. It is true, that uncommonly large draughts, whether of stimulants, or of articles of an acknowledged reverse character, such as water in certain states of the system, when suddenly drank, do sometimes produce immediate dissolution. But the same thing occurs, on the application of highly escharotic substances, in producing destruction of the skin. So of the loss of vitality from exposure to the numbing influence of ice, snow, &c. while the application so highly recommended and so universally followed, of frictions of ice, snow, &c. proves that the impression made by them was stimulant in character in the first instance. But it is plain that the subjection of any of the tissues, to any sudden and extravagantly violent stimulus, more than the reactive agency of the same can successfully contend against, must inevitably eventuate in the paralyzation, and death of such tissue. A rapid expenditure of its forces, the result of too sudden innervation takes place. It is in this way that large alcoholic or other draughts kill. If this be a debilitant operation, then it will be hard to convince us of the true nature of the reverse operation. Opium and alcohol when exhibited in certain doses, produce evidently a stimulant effect, as every tyro knows; yet he equally knows that if persevered in to the administration of larger doses, a state of torpor is induced. But even this latter cannot be considered a debilitant effect strictly. We see here, only a gradual diminution of nervous energy, the result of prolonged stimulation, in the same way that eye-sight, hearing, &c. or any of the senses, are blunted in sensibility and deprived of their accustomed percipiency by the frequent or prolonged subjection of them to the impressions of their appropriate stimuli, light and sound, as takes place in old age, or prematurely by their subjection to unusually violent degrees of these stimuli. If it is a debilitant effect, then it is the result of previous stimulation, and certainly not a debilitant effect sui generis. We believe then that the same degree of irritation, (and we consider it a stimulation essentially,) which is produced by alcohol or any other irritant on the mucous membrane occasioning alterations, whether temporary or organic, is transmitted to the brain, producing there like effects; and that

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in every case, the common medium of this impression is the nervous expansions on the mucous membrane of the stomach. Let us enquire into this more minutely.

In what then does this perception by the nervous extremity consist? It consists in the excitation produced on these, which is at first simply erethismatic, simply an exaltation of their sensibility or irritability, (a faculty denied them by Meckel) the result of too active or too rapid contractility,—an increase of molecular action similar to that which occurs in the mucous tissue itself. This is the condition of the sentient extremity,—this is the condition of the mucous membrane, and by actual transmission, this is the condition of the cerebral centre itself, as the first effect of the stimulation. By erethismatic we mean, a simple exaltation of the natural sensibility, inducing a more active display of functional performance. As this erethism is greater or less, will the immediate consequences ensue, of a greater or less afflux of the respective fluids to these several portions of the organization, constituting the commencement of an actual congestive state; characterized in the mucous tissue by increased redness and warmth, and if in excess by tumefaction, and in the nervous apparatus, of itself of more delicate texture, of corresponding phenomena. And this condition not necessarily accompanied by pain, is nevertheless indicated, by evident increased activity of circulation, as evinced by the general glow and diffusion of warmth on the surface, after the first draught, and as we have already said, if the constitution be endowed with great irritability, by other decided phenomena. These are only temporary exaltations of organic sensibility, and are precisely such as every one feels after the enjoyment of a hearty meal, or the reception of some unexpected agreeable intelligence, or the sudden excitement of anger. But it stands to reason, that if a repetition of this stimulation takes place, a repetition also of these effects must ensue, and of necessity in a greater degree, particularly if the first stimulation be not subsided, the one then being exasperated and doubled in intensity by the superaddition of the other, according to the acknowledged law of irritability, confirmed and warranted by experience, that a tissue once irritated is ever after more liable to be re-irritated, and the irritation exasperated in violence, especially if the tissue be in a state of irritation at the time that the new one is superadded. But although this erethismatic state be temporary, the time of its duration must be proportional to the degree of its violence and the constitution, age, sex and habit of the

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individual. Hence we see daily, that those who have indulged, recover their accustomed energy, both mental and physical, after the lapse of various periods. Thus, the stout, healthy and athletic young farmer, may scarcely appreciate the stimulation, or if he does, recovers in a much shorter period of time, than the delicate, irritable female devotee of fashionable life, who not unfrequently, resorts to her Eau de Cologne, or Eau de Lavande, for depression of spirits, or the fashionable "blue devils." A degree then of excitation has been established, and certain consequences have resulted; while a repetition of this stimulation produces others, and these *always* of an increased degree of violence an importance. So far we have had only an exaltation simply of organic sensibility. Push this exaltation farther, and what are the changes of structure induced and how are they effected? In the normal or healthy (par excellence) condition, an undisturbed equilibrium of forces exists between the various portions of the organization. We say this for argument sake, inasmuch as we are confident that no such perfect condition of the human economy can exist,—no such equal and exact play of affinities can be proved, as pre-supposes the preponderance of no one apparatus over all the rest. For in truth, when we regard the great predominance of the abdominal vascular system in the infant, of the cutaneous vascular system in more advanced age, and of the vascular system proper in old age, as is indicated by bowel complaints, cutaneous diseases and affections of the heart and arteries, during these several periods, we are in no small measure forced into this conclusion. But we say for argument sake, that this equilibrium may exist, as well as a reciprocal relationship between the fluids and solids, both exercising an equal influence over each other, in subservience to the wants of the economy. Now is it not evident that any unnecessary stimulation practised on these, whether greater or less, must unavoidably increase this reciprocal action, and influence of both? And as it is through the intervention of either, that the other is excited, (and we think that the solids are first affected,) must not corresponding effects be wrought?—Must not an increased flow of fluids follow this excitation? We see this constantly occurring. At least, if not originally through irritation of the solids, the afflux of fluids is constantly kept up as long as the solids remain irritated, and subsides when their irritation is appeased. The irritation then of the coats of the stomach, its nerves, and the brain, induces an unusual afflux of the vital fluid to these organs. The tissues themselves are en-

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dowed with increased excitability—corresponding changes are wrought in the fluids, their destination and normal healthy purpose is perverted, viz: that of nutrition, from the stimulation of the solids; while they in their turn acquire an unusual power of themselves, over the solids. A greater change of their molecular affinities is induced, by which they become more and more stimulating. This alternate action and re-action continues, until the effects are discernible from post mortem examinations.

But it is not only this change which is wrought: it is not only this disturbance of the avowed equilibrium which alone takes place: something more is requisite for the completion of the suicidal act:—these are not without their own immediate consequences. As long as the stimulation increases, the afflux increases—tumefaction, congestion, and engorgement increase, unless these be relieved by exhalation from the mucous surfaces, and active absorption. And as to absorption, its diminution and suspension appear to be connected with the congestion of the fluids, either red blood or lymph, induced by *irritation* or *inflammation.* The fluids collected in the tissues, the seat of the irritation, turgescence and erection ensue, a *remora or stagnation* results, and where erection is not a natural condition, the function of the organ is deeply assailed and totally lost. (*"See Cyclopædia, part* 2.") Now this relief afforded by exhalation or absorption, in cases particularly where abandonment of stimulation is followed, does occur. Yet the reverse must hold, if a contrary course be pursued. A greater tumefaction and congestion is established, cessation of, or a labored motion of the fluids is the result, and particularly in those deep seated; while the irritation of the solids still continuing, still persists in its unwonted stimulation. The result of this stagnation must be a greater or less depreciation of the healthy nature of the fluids, amounting to a vitiation of their qualities, as we observe sometimes in the blood drawn from phlegmonous inflammations, being darker and possessed of more fibrine than commonly. Whatever may be the precise nature of these changes, we do not say. Certain it is, that marked differences do occur. It is not only, however, this extraordinary afflux and depreciation which follow; an excess of nutrition takes place, a vitiated nutrition ensues, imperfect deposition and true hypertrophy result. This sense of alterations must of necessity be felt equally and nearly synchronously, by the nervous expansions, nervous cords, the brain itself, and the mucous membranes; for the irritation we have

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said is successively transmitted from one to the other. The transmitted irritation is unchanged in nature; but may of course vary in degree slightly. For the different tissues, as every one knows, will be differently affected in proportion to their degree of excitability, and we think we have reason to take it for granted, that the brain will be so more than others, although we may not be able to detect evidences of its previous existence more easily and palpably in this disease, in the brain than in the mucous membranes—a difficulty entirely attributable to the insufficiency of our means for detection. Still, whether this be true or not, certain it is, that this irritation and its consequent alterations are perceived by all and by none more strongly than the brain. But we rely much on the analogy which exists between the mucous membrane proper and the neurilemma of nerves, and between both of these with the pia mater of the brain; as indicative of this simultaneous perception of the irritation induced. And although in the nervous extremities, nervous matter strictly and not neurilemma is that first impressed, the latter is not so far distant that it may not be said to be simultaneously irritated with the former. The nerves in their ramifications open immediately on the mucous surface by a nervous bulb, divested of all covering, and hence the rapidity of this transmission must be great indeed. And while Meckel (page 175, vol. 1,) denies to the nerves the possession of *irritability*, he allows them, extensibility, contractility, elasticity and sensibility, powers amply sufficient for our purpose.

But this opening of the nerves in the nervous expansions, by means of nervous matter proper, affords us another argument in favor of the idea, that the fluids are effected by the solids.—Since it is solid and not fluid which is impressed by the irritant. But it also furnishes us with another modus operandi, by which to explain the changes wrought in the brain by these impressions. This highly excitable portion of the organization, on perceiving the first impression, manifests decided simple erethism or exaltation of sensibility, by the more active display of its abilities, by an exhibition of unusual functional performance, by greater activity of its molecular action, and by a greater mobility of the nervous fluid, whatever it may be, as a consequence of the impression made on the nervous matter.—But increase this erethismatic excitation, establish a decided irritation, push it to inflammation, and you must have through all these successive gradations, gradations in the consequences ensuing, from temporary afflux, to temporary active conges-

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tion, and from temporary active congestion, to permanent congestion, engorgement and disorganization, as naturally as effect follows cause. We have then followed up the disease from its simplest to its complicated forms—from simple exaltation of organic sensibility, to confirmed active sanguineous congestive inflammation. Let us inquire how our remarks are confirmed by the *history* of the disease in question.

We will for example take an individual of healthy habits, unaffected by constitutional or local disease, if such can be found, and characterized by the nervous constitution, in which Broussais has seen these convulsive symptoms which characterize the disease, occur. Upon the reception of the first draught, after the lapse of a few minutes, warmth is experienced at the epigastrium, a glow on the surface; the face is flushed; the eyes become more bright and brilliant; the nervous centre being excited, the volubility becomes unusual, muscular motion more quick, sudden and excitable; the appetite becomes increased, eliciting unusual gratification, while a degree of restlessness is manifested. Now if this state be allowed to subside of itself, these manifestations disappear, yet the languor, and desire for quiet, the gratified appetite, and lack-lustrous eye, the dejection of spirits which succeed, the sober and rational tongue and commencing general exhaustion are all alike evidences, and although negatively, of an erethismatic degree of irritation having once existed in both stomach and brain. Now if this be the effect from the first draught, is it irrational to conclude that had the potation been four or five times stronger, or been four or five times repeated, that the effects experienced would have been four or five times increased in violence? We think not. We should have an exaggeration of all, indicated by extreme flushing of the face, wild expression of the eyes, tinitus aurium, cephalalgia either partial or general, incoherency of speech, extravagant muscular activity, (for we have seen individuals walk miles after stimulation of this kind, who were habitually, physically indolent,) extraordinary and ill-directed appetite, amounting to gluttony, somnolency and profound sleep—as the immediate consequence; while again as negative evidence, when these, as is usual, have subsided by a night's repose, we should have on the succeeding morning great thirst for water, total inappetency, a desire for red pepper and other stimulants contrary to custom at breakfast, vacancy of mind and inability of directing one's energies, with accustomed pertinacity to business pursuits, uneasy, dull, heavy and continued headach, more fre-

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quently in the anterior and upper portion of the cerebrum, and if sexual stimulation have been practised, in the back of the head, as indicative of a degree of inflammation having been established.

Such a course being persisted in, day after day, night after night, each successive debauch being deeper and more exciting than the former, it cannot fail of producing violent and still more violent effects. After a time, in place of slight gastric distress, we have the tongue red at the tip and edges, its papillæ swollen and developed; a constant gnawing at the stomach, with pain sometimes at the epigastrium on pressure; skin pimply, dry and harsh; conjunctivæ reddened and suffused, or even jaundiced and watery; the judgment impaired; the reasoning powers obscured; thought banished from its throne and memory defeated, with pain, sometimes continued, erratic, or shooting of the limbs, and on exertion of the same, tremor, feeble and irregular locomotion, and uncontrollable muscular motion generally. All of these are certainly evidences of both gastric and cerebral derangement. These effects have been gradually induced, however, and it is at this period of the work of destruction that the evidences of the true disease, or its most alarming symptoms display themselves.

The sailor from a long voyage, on the receipt of his wages, as naturally as the world revolves from west to east, resorts to some scene of debauch, practises stimulation after stimulation, both sexual and otherwise,—is perhaps inebriated both day and night, exhausts his funds, is of necessity but badly supplied with fuel for the fire he has kindled within him, and shortly from an attack of what is *usually termed* delirium tremens, resorts to a hospital for relief. Now in what condition do we find him? We find him laboring under great general irritability, (and this whether he be of a lymphatic or nervous constitution, with the exception that it will vary in degree of necessity,) his eyes, bloodshot, suffused and glassy; uncontrollable in his action, requiring frequently a straight jacket; exceedingly alarmed and restless, fancying his friends his enemies; his speech wild, vague, incoherent and *indicative of danger and a determination to avoid it;* his face flushed and bloated; his jugular veins swollen, and arterial pulsation rapid, full and labored; his tongue dry and red; his thirst insatiable; sometimes continued and uncontrollable nausea and vomiting; belching frequently; extremities cold and skin clammy, with constipated bowels. Should sleep, if it can be so called, ensue, which observant nature

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sometimes favors him with, he dreams and mutters, is restless and disturbed, and on awakening relates of "hair breadth 'scapes" and *persecution by the devil and his imps.* What then is the state of this man's brain? Are these not evidences of excessive stimulation and too rapid innervation? We believe that they emphatically are, and that his brain is in an active state of sanguineous congestion, the result of highly and repeat edly excited vital erection. That at this moment he is laboring under masked or disguised inflammation of the gastric, and perhaps gastro-enteritic mucous membrane, complicated with active sanguineous congestion of the brain and its membranes. And that in proportion to the sudden and violent or gradual supervention of this congestion is the effect produced; characterized if the former, by sudden death; or if the latter by the development of these convulsive symptoms of the disease. And we can cite examples of both.

But it will be asked, in what manner does this excess of stimulation and innervation operate in developing the convulsive symptoms? We will explain, but we must not be understood to render it as clear as that in addition, two and two make four; we advance it as our belief, and would submit it accordingly. We need not endeavour to render plain the rationale of excessive stimulation. The effects produced by it, as every one is acquainted with, are ample guarantees for the existence of such a cause. Excessive stimulation, and excessive innervation, are the same in fact and operation. These are perceived by the nervous matter proper, an exaltation of its organic sensibility takes place, an increased molecular action follows, the play of its affinities is disturbed, the customary equilibrium, whether perfect or imperfect, is deranged. Now as soon as it has attained this pitch of excitation, from necessity, the demand for supply of stimulus becomes greater, in the same manner that the same extravagant stimulation on the coat of the stomach, demands a repetition of the stimulant, as is the case with all artificial gratifications. But the supply is exhausted, an effort is made by the nervous matter,—an effort of nature, to supply the demand, to repair the injury, to acquire its customary, and then it would seem a necessary degree of excitement. An increase in the reciprocal action before spoken of ensues, and both fluids and solids acquire increased powers of stimulation respectively. This stimulation, however, accustomed to be regulated and steadily guided by the draught, no longer operates in its accustomed uniform and regular manner. From over exertion between them-

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selves, and the want of usual stimulation, a rapid expenditure of forces ensues; but a still stronger effort is made to recover tone and vigor, and to recruit this expenditure. It is in this unequal conflict, unassisted and destitute of guidance, irregular and insufficient in its action, that the brain developes in the locomotive apparatus, this convulsive phenomenon, through nervous communication directly, while the same developements, we say, take place throughout the whole body, and not the locomotive apparatus alone, for the tongue at this stage of the disease exhibits parallel appearances.

So far we have abundant evidence, of not only an erethismatic excitation, but of that deranged reciprocity of relation between fluid and solid, which we have endeavoured to explain. We must now premise that by the prompt application of remedial means, he has survived the attack, that this relationship has been partially re-established, and that our patient promises reform and amendment. which he may at least do. But is this all? Is his brain in the same condition that it was in previous to the debauch? are his mucous membranes sound? Is his whole system perfect in its operations? Certainly not. The effect has been, that from an excess of nutrition, and that imperfectly performed, the result of excited circulatory action, and from defective or diminished absorption, an unusual interstitial deposition has been made, a veritable hypertrophy has been established, to the prejudice of free molecular action in all. Now this may be remedied by absorption in the others, but occurs but seldom, or if it does, only imperfectly in the brain. The alternation of cerebral texture may not be so prompt and great as vitally and altogether to impair instantaneously its functions. We daily see idiocy and paralysis superseding frequent and prolonged stimulation; and we have likewise witnessed shades of intellectual depravation and injury to the mental faculties from partial stimulation. But we have never seen any cases of perfect recovery from either.

We trust then, that we have shewn that the disease usually termed delirium tremens, originates, in the first instance, from abuse of alcoholic stimulants, and that the same results may follow abuse of other stimulants—that the first effects produced by their reception, is an erethismatic degree of excitation, wrought on the mucous membrane of the stomach and sentient extremities, and on the brain. That the degree of stimulation may be exasperated to such a degree as to induce inflammation in each, of a highly violent grade, the consequence of which

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may be at first derangement of the reciprocal relationship between fluid and solid, and ultimately of certain grades of marked alternation and disorganization more appreciable in the mucous membranes and nerves, than in the brain. That in consequence of the absence of a continuation of the customary degree of stimulation, certain morbid actions result, which eventuate in the developement of those cerebral and convulsive phenomena which characterize more particularly the disease we have had under consideration. That these morbid changes are the result of active sanguineous congestive inflammation—that upon the application of remedial agency for its relief, the brain is left in that condition which is marked by a decided alteration from the normal state; and finally, that these alterations may vary in degree and violence from slight to decidedly evident, as is characterized by simple hardening and permanent engorgement, or true hypertrophy, softening, suppuration, idiocy, paralysis, disorganization and death.

In place then of the usual appellations of delirium tremens, or mania á potu, which are given to this disease, we infinitely prefer that of *gastro-cerebritis.*

So much then for our reasoning. What now is our experience in the *treatment* of the disease, and in what manner does it corroborate our views of its pathology? We have already said that our opportunities have been great, as may be imagined from a continued practice of two years, (and we regret that we have been debarred the pleasure and privilege of enjoying the same any longer,) in the Marine Hospital of our city, amongst sailors, a class of individuals the best adapted for furnishing the surest criterions of the disease. During that period, we admitted into the Institution 23 patients afflicted with the disease; of which number 15 were violent cases, and 8 were mild.* Our plan of treatment in these last was *entirely anti-phlogistic*, and strictly depletive, consisting of cups to the epigastrium, abdomen and hypochondriac regions, succeeded by fomentations of warm water, of warm water and vinegar, and occasionally, when pain existed on pressure, of anodyne fomentations, of cups to the nape of the neck, and leeches to the temples, whenever they could be procured, (which we are constrained to say was not always,) of cold acidulated and mucilaginous drinks, or iced water, of stimulant enemata, as the bowels were frequently and generally constipated, of

* I never lost a single case from this disease, either within or without the Institution.

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cold affusions, and cold applications to the head, on which we placed great reliance, being cautious, however, in their free use, together with the injunction of observing as much as possible, entire quiet and repose. On the subsidence, under these means, of the violent symptoms, convalescence was assisted by an allowance gradually of nutritient broths, rice water, rice and milk, quinine and chamomile, and free exercise. Such was our practice, and a decidedly successful one it proved to be in all such cases as we have denominated mild, or in which gastric symptoms predominated, while the cerebral were but partially developed. We never administered, in such cases, any opiates or camphorated juleps, or mixtures, (unless we used opiates in our fomentations,) and never exhibited calomel and opium in combination,—with some a favorite practice.

Our treatment was, however, modified in such cases as evinced a decided predominance of cerebral disorder, by a severe adherence to the above course, accompanied with exhibitions of opium internally, of the preparations of which, we preferred the form of Dover's powder, combining, as it does sometimes, a diaphoretic effect. The administration of alcoholic stimulants with opium, on the principle that the "hair of the dog is good for the bite," a plan we have seen largely pursued, we disapproved of, and never followed. The torpor of the liver, and secretion generally, which was said to be relieved by calomel and opium, we have seen in the generality of cases, yield to extensive cupping and fomentations. We disapproved of the administration of any stimulants by the mouth, and indeed in many cases, the stomach would not bear even cold water. On the recovery of these violent cases, and particularly if the general habit was bad, and obstinate torpor of the brain remained, we have found decided benefit from the use of the blue mass in 5 grain pills at night, followed by small doses of oil on the succeeding morning.

Such then are the views we entertained of the pathology of gastro-cerebritis, and such is our treatment of the disease.

Charleston, S. Carolina, January 3, 1834.

ART. IV. *A Case of Hydropleura, successfully treated; with a new view of the nature of the Disease, and the probable modus operandi of the Prescriptions.* By THOS. M. LOGAN, M.D., Charleston, South Carolina.

ON the 15th of June, 1833, John, a negro slave, the property of Mr. Hugh McDonald, of this city, was received into my in-

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firmary, to be treated for difficulty of breathing. The history of the case related by the patient, and corroborated by his master, was this: He was aged about twenty-five years, stout frame, had been accustomed to the care of horses, and had, previously to the preceding fall, enjoyed good health. At this period, from exposure to the malaria of our lower country, he had contracted an intermittent fever, which finally assumed a tertian form, and continued upon him until the ensuing spring, when he took a violent cold, since his recovery from which, he was no longer attacked by his ague and fever, but was troubled with an obtuse pain or oppression in his right breast, and a great difficulty in respiration, particularly after stooping or exercising, and when in a recumbent position. At the same time he complained of anorexia, and great insomnolency. *Examination.*—Respiratory buzz perfect in the left thorax; but in the whole right thorax the voice was more or less quivering or ringing, with egophony towards the inferior or lower part of the lung, gradually dying away into a total absence of the vocal or respiratory sound, in the mediastinal portion.

Percussion gave a healthy pulmonary sound in the left thoracic region, while in the right, the sound was between that of the cardiac and pulmonary, except towards the mediastinal region, where it partook more of the cardiac sound, and was dull and heavy. The phenomena thus clearly developed by the application of the stethoscope and plessimetre, in addition to the other symptoms, leaving no doubt on my mind with regard to the diagnosis, I proceeded without hesitation to treat the case as one of hydropleura, and with this view directed the following formula to be administered regularly, with a pediluvium of sea water, morning and evening.

℞.—Decoctum altheæ officinalis, . . ℥ vj.
Potassæ nitratis, ... ʒ j.
Salicine, ... gr. x.
Acid: Sulph: Aromat: . . . . ℳ vij.

Fiat mistura de qua capiat cochl: ij; secunda quaque hora.

The decoction of althea was, of course, only employed as a demulcent vehicle for the nitrate of potash, and the salicine was added with a view of giving tone to the stomach. The *guimauve* or *marsh mallows*, however, is now much used in the French practice, and is considered of eminent service in nephritic and calculus complaints.

June 16th.—Our patient was seen this day by my friend Dr. T. L. Ogier, and my father, Dr. G. Logan, who, after a close

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examination, concurred fully in my diagnostic views of the case, which they pronounced decidedly hydrothorax.

June 18th.—Our patient complains of cephalalgia, and great insomnolency; dyspnea very distressing; pulse ninety; bowels costive. To stimulate the peristaltic motion of the bowels, as well as to answer other indications observed in the sequel, we directed the following prescription, enjoining, at the same time, an absolute diet.

℞.—Potassæ bi-tartras: . . . . . ʒ ss.
Sulph: Magnes: . . . . . ʒ j.
Potassæ nitratis, ... gr. xij.
Aquæ, ... ʒ vi.
Fiat Haustus,

June 19th.—Catharsis and diuresis have been excited to a considerable degree in our patient, who feels much better and easier; pulse eighty; tongue clean; other symptoms the same. Directed pediluvium to be continued, and a strict diet to be observed. For reasons which will presently be described, ordered the following modification of Eberle's formula for dropsy:

℞.—Potassæ bi-tartras: . . . . . ʒ ij.
Potassæ nitratis, ... ʒ ss.
Pulv: scillæ maritim: . . . . . ʒ ij.
Tart: Antimonii, ... gr. ij.

M. ut ft. Pulv. iv. e quibus sumat: una in aqua ʒ vj. mane, merid: et nocte.

June 22d.—Our patient has perspired and urinated very freely for the last three days; feels much relieved, and desires something to eat. The application of the stethoscope and plessimetre shews considerable diminution of the egophony, and a partial return of the healthy pulmonal sound. Having thus every reason to be satisfied with the propriety of my mode of treatment, I directed the prescription of the 19th to be repeated, enjoining, at the same time, a rigid attention to diet on the part of my patient. From this day our patient progressed in a gradual and perceptible convalescence, until the 2d of July, when he was dismissed, entirely relieved from the affection for which he had entered. It is necessary to add, that the prescription of the 19th was repeated every third day until he left me, when he was supplied with a due number of the powders, with directions to continue their use for one week longer. Three or four months after, I accidentally saw my patient, who appeared in fine health, and informed me that he had felt no return of his former affection.

Since the philosophical experiments of Mr. Dutrochet on the

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subject of *endosmose* and *exosmose*,* now occupying the attention of every scientific mind, have thrown such a flood of light upon the process of absorption and secretion, especially the exhalation of fluids into cavities, constituting dropsies, it may not be thought presumptuous to attempt to account for the modus operandi of the treatment, adopted in this case, in a different manner from that usually accepted.

In limine, therefore, we deem it proper to premise, that we regard hydropleura to be the effect of an inflammation, either idiopathic, or sympathetic, of the pleura, whereby the character of its surface is changed, and the fluid serosity, lubrifying it, as extremely modified and effused, compressing to a greater or less degree the lungs, opposing their expansion, and obstructing the access of the atmosphere. Now this pathological view of the case will be found in strict accordance with the theory of Mr. Dutrochet, who regards all the tissues and organs of animals to be essentially composed of agglomerated, globular or vesicular cells; and the elementary formation of the parenchyma of all the parts of organized bodies to be so uniform, as to differ only in the nature of the substances, that the vesicular or globular cells contain, and of which the organs are entirely composed; and accordingly it is in these cells or vesicles that secretions occur, and they furnish the fluid proper to each organ; but which fluid, we may reasonably infer, may, during a state of superexcitation, be poured out too abundantly, and thus constitute a disease. According to this theory, we find that the vesicular formation of the tissues of our organs, is the *sine qua non* of all secretory actions, whereby we possess the indispensable and fundamental condition for the production of the adfluxion and impulsion of the fluids, into which all the vital actions are to be resolved. Let it here be understood that the force producing this movement of the fluids, has been demonstrated by a consecutive series of experiments and deductions, philosophically conceived, and happily arranged, to be an electric phenomenon, and to have existence, wherever vesicles, pouches, or sacks, either animal or vegetable, containing a fluid, are in contact with a fluid of less density: this last will then constantly be introduced within the vesicle or pouch. This power is called *endosmose*.† To the reverse of this, i. e. when the surrounding fluid is the denser,

* *Vide*, "L'agent immédiat du mouvement vital, devoilé dans sa nature et dans son mode d'action chez les Végétaux et les Animaux." Par M. H. Dutrochet, Paris, 1826.

† From Ἔνδον, within; and ὠσμος, impulse.

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and the contained fluid, the most liquid, passes out of the vesicle, the term *exosmose** is applied. Now from the experiments of M. Dutrochet, it has clearly been ascertained that absorption, exhalation, and secretions, constituting in fact the nutrition and LIFE of the vegetable, are all performed through the agency of this electric principle. Taking Bichat, therefore, for our foundation, we conclude, that, from the similarity of these functions in vegetables and animals, they are induced by the same principles; and consequently, that electricity is the principle of organic life. But in the prosecution of the experiments on this subject, it was discovered, that in proportion to the increase of temperature, an exaggerated or exalted state of this physico-organic action took place, whereby the surrounding fluid was drawn with increased force into the enclosed thicker fluid; and to this increased power of adfluxion, the term *hyperendosmose* was given. Now assuming that the movements of the fluids are all performed through the agency of endosmose and exosmose in a normal state in organic life, we can easily conceive, that when, as in inflammation, a turgid and more heated state of any of the organs takes place, a corresponding hyperendosmose ensues, and the fluids will be poured forth in great quantity into the inflamed organ. In our preceding remarks, we have stated that we believe hydropleura to be the effect of inflammation; hence we at once see the justness of the application of this doctrine of electro-dynamics to the pathology of this disease; and consequently to the therapeutics. Inflammation of the pleura excites hyperendosmose; the consequence of this is the effusion of water; and the indication of cure, 1st, the reduction of inflammation, and 2d, the excitation of *exosmose.*

In proceeding thus to draw our inferences as to the probable *modus operandi* of our treatment, we deem it proper to state the reasons, which actuated us in the selection of our remedies. Without attempting to settle the doubtful and disputed point, whether a serous effusion, the effect of inflammation, can subsist in the pleura, when its exciting cause, the inflammation itself is extinguished, without keeping up an irritation *sui generis;* we will merely state, that as every inflammatory symptom was absent, the pulse being at eighty, and no *acute* pain being experienced either during inspiration or expiration, while, at the same time, the stethoscope and plessimetre readily discovered the presence of water, the only indication, *prima facie*, pre-

*From Ἐξ, out; and ωσμος, impulse.

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sented to our mind, was to excite the excretories to an increased action, and thus by promoting the secretion of a larger proportion of watery fluid from the blood, to stimulate indirectly the absorbents to supply the deficiency, and thus reduce the dropsical effusion. We candidly acknowledge, that we first set out with this view of the case, nor was it until the fourth day after the patient had been under our treatment, that the interesting treatise of M. Dutrochet fell into our hands, and suggested new ideas. Forthwith applying the reasoning of this ingenious philosopher to our case, we were forcibly led to regard the serous effusion, as superinduced by an hyperendosmose, which although now perhaps extinguished, still had left very perceptible effects in the distressing dyspnea, &c. The necessity therefore of exciting a counter impulsive, exosmotic force, in opposition to that which had produced the effusion, flashed at once before our eyes. Reasoning then analogically upon the known effects of aqueous solutions of the vegetable acids in producing artificial exosmose, I determined instantly to test its effects, and for this purpose, prescribed the bitartrate of potash, largely diluted in water. Reflecting at the same time upon the responsibility of my situation, with regard to my patient, (a circumstance, which should never be lost sight of, when human life is confided to human skill,) in thus tampering with his disease; I endeavored to select some prescription, which, while it should meet my new views of the case, would at the same time be of some acknowledged efficacy in producing diaphoresis and diuresis, conformably with the old theory of the modus operandi.—Accordingly on the 19th of June, the day after I administered the solution of cream of tartar, I commenced with Eberle's prescription, with this difference, viz: that the portion of cream of tartar was increased from one ounce and a half, to two ounces, and the doses were administered in large proportions of water. In thus employing water for its eminent exosmotic effect, I considered myself justified, in another view of the case, in adopting the generally accepted theory of Dr. Cullen, which is a sufficient answer to those, who defend the practice of enjoining an abstinence of all drinks in dropsy. For this sagacious writer very judiciously remarks, that by withholding the use of water in dropsy, the quantity of fluids will necessarily be diminished, and the secretories of the kidneys decline into a state of inactivity and collapse. In now deducing our corollaries, it can readily be understood from our preceding remarks, how very applicable is the doctrine of electro-dynamics to the pathologi-

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cal phenomena attendant upon dropsy. We have already seen that the fluids enter into the constituent parts of the organism, as one of its integral elements, and therefore that they are not invariably in the same state, but are susceptible of, and do undergo alterations. This is only in strict accordance with their vital powers. We have seen that in inflammation of the pleura, the serous exhalation becomes modified, i. e. becomes impregnated with coagulable matter, albumen, and fibrin, which augment so much in the progressive increase of the inflammation, as to form a plastic layer, or pseudo-membrane on the serous surface, accompanied with globules or molecules, similar to those of pus. Now in artificial endosmose, it was discovered, that when any organic cavity, containing a dense fluid came in contact with a thinner fluid, the thin fluid passed into the organ containing the thick fluid, and accumulated in such a quantity as to expel the thick fluid with violence. This action lasted as long as there was any thick fluid in the organ. The same deductions were also found applicable to the effects or agency of the diluted acids. Hence we infer that the administration of water and of acids, as in the case under discussion, by increasing the proportion of the serum in the capillary circulation, produced a violent endosmatic action of the serum, which passed through the parietes of the pleura, and accumulated in such quantity, as to expel the contained thickened fluid. This action lasted until the whole of the thickened serum of inflammation was expelled, and its place supplied by a thin aqueous fluid, capable of being exosmosed by another change of affinities, or, in other words, absorbed.

Perhaps in our present state of information, it is advancing too far to indicate the manner in which the removal of the serous exhalation, in the present case, constituting hydropleura, was accomplished. Certes, the fluid was removed. We have endeavored, in the spirit of the age, to substitute a more plausible rationale than the generally admitted hypothesis of capillary attraction, for its absorption and removal. Should we, however, have failed in the application of our reasoning, we will nevertheless rest satisfied, if we have, in any—the slightest degree, contributed to the spirit of doubt and examination now created in medical studies, and to a further and more general inquiry into the nature of the animal fluids in health and disease; a subject big with the fate of medicine, and calculated in our opinion to clear away many of the impediments, which now obstruct the path of the medical philosopher.

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ART. V. *Some remarks on the Sudden Death, without apparent injury or organic derangement, from the supposed wind of a Cannon Ball.* By R. TOLIFREE, Jr. M.D. of New York.

DURING the extensive cessation from hostilities which now exists, the subject of gun-shot injuries, in many particulars, may be considered as a part of a complete medical education, rather than as a branch of frequent application. Yet the precepts of our politicians should be remembered, "in peace prepare for war." That part of natural philosophy which treats of the force and direction of projectile bodies, has been applied so imperfectly to the matter under consideration, and to other collateral topics, that I think myself justified in noticing one or two errors. I will quote the late work of Sir George Ballingall, professor of military surgery in the University of Edinburgh, since he is considered good authority on subjects connected with the department which he fills. Page 226, he observes, "the resistance of the soft parts may be considered as the continued application of a power, the uniform and equable operation of which, causes the motion of a ball to be curvilinear, and ultimately brings it to rest; as is explained by writers on projectiles." It could be very easily shown, that the resistance of the soft parts are not uniform and equable; for their resistance depends on formation, whether adipose, muscular, cellular, &c., also on position, size, and density. But should it be urged that this doctrine only holds, that in the same part, the resistance is uniformly increased as the impetus of the ball is greater; this position is equally erroneous, for they all take for granted in this case, this complete elasticity of the abdomen; and with real elastic bodies we know the force of the original moving body is imparted to the elastic body, and how then can death be accounted for in those cases where there is no forcible change of position? Moreover, the abdominal parieties have not sufficient elasticity to account for the phenomena in the manner that has been attempted. Besides, we know of no writer on mechanical philosophy who explains the direction of projectiles in the way that has been assumed. If I correctly understand the doctrine which military surgery has here inculcated, it is, that before the ball reaches the human body, (provided no other substance intervene,) it has a rectilinear motion, and after it impinges against the body, the direction becomes curvilinear. Here we have plainly stated then, this false proposition, that if a body strikes directly or indirectly against another at rest, the moving body acquires, from the re-

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sistance, a curvilinear direction. All writers on projectiles assert the contrary, and expressly teach, that if a body moving in a straight line is altered from its course, by striking against another substance at rest, from which it rebounds, the subsequent direction of the moving body is either perpendicular to the opposing body, or in a line which would become a diaganol to a figure bounded by two lines marking the first course of the body, and by two lines describing the direction of the resistance. Of this enough has been stated to show the untenable position of this theory, and the following application of the same principles are equally erroneous. Death supposed to have arisen from the wind of a shot, has been a theme on which grandames have delighted to dwell, and thus give to unsophisticated urchins some ideas of the horrors of war. The medical philosopher has not refused to turn his mind to this mysterious topic, and most of them have differed in the rationale of this phenomenon. I will cite from Sir George a few of the explanations already before the public. Page 230, "In the Edinburgh Medical Journal, for the year 1812–13, a series of papers on this subject are to be found, one from Mr. Forbes, a clergyman, who conceives that the sudden deaths, and other accidents, attributed to the wind of a ball, are owing to the vacuum produced by the rapid motion of the ball through the air. 'When a ball,' says he, 'passes close to the stomach, there is, in the first place, a great addition to the pressure on that viscus, from the condensation of the air; as soon as the ball has passed, this pressure, with a great part of that of the atmosphere, is taken off, the consequence of which is a sudden expansion of all the fluids in the stomach, and of the blood in its vessels, and the consequent rupture of both.' Mr. Spruce, a naval surgeon, attributes these accidents, particularly on ship board, to the detachment of light substances from the rigging, such as pieces of canvass, rope yarn, &c., or parts of the wadding, he conceives, may be carried along with the ball, and impinging against the body, produce similar effects. Mr. Ellis, in a third paper in the same journal, ascribes these injuries to electricity, generated by the passage of balls through the air. This hypothesis has attracted more attention than either of the former; but like the others, 'it wants the support of positive evidence, while much negative evidence may be brought against it.'" I agree with the professor in his not sanctioning either of these theories, and the third is inadmissable, since those who have been injured, and have had shot pass near enough to touch the cuticle, have felt none of the effects of electricity.

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The first theory falsely asserts, that great derangement and injury are the consequences, while the second improperly assumes that on the field of battle, the wadding is carried the distance of the ball, not as cohering to the ball, but as a satellite accompanies its primary. After quoting these opinions, and briefly noticing their fallacy, we will transcribe Ballingall's language on the generally adopted opinion in explanation of this effect, and wonder that it has not elicited a strenuous opposition from its inconsistency and want of plausibility. Page 231, Dr. Ballingall says, "the following is Baron Larrey's explanation of the phenomenon:—an explanation so far as I can judge quite analagous to that suggested in Sir Gilbert Blane's work, and in which also, Mr. Guthrie, the first authority in this country, seems disposed to concur. He says, 'a cannon ball is propelled *at first* with a *rectilinear movement;* and, if during *this part of its course* is strike against any part of the human body, it carries it away; but the ball after having traversed a *certain distance,* undergoes *some change of motion in consequence of the resistance of the atmosphere and the attraction of the earth,* and turns on its own axis, *in addition to the direct impulse* received from the explosion of the powder. If it should strike any part of the human body when the velocity with which the ball *is passing is greatly diminished,* it does not carry it away, as in the preceding case; but, in consequence of its curvilinear or rolling motion, *it turns round the part* in the same manner as a wheel passes over a limb, instead of forcing a passage through it.'"

We deny that the first motion of a cannon ball, after leaving the piece is, strictly speaking, in a direct line, and after passing a certain distance undergoes some change in consequence of the resistance of the atmosphere and the attraction of the earth. All writers on projectiles, say or reason on the direction of a cannon ball, as if it were a parabolic curve, and a figure bounded by such a line cannot be called a rectilineal figure. Do not the atmosphere and gravity operate in changing the course of the ball, even as soon as it quits the gun? Allow that a vacuum is formed by the explosion of the powder, still you can only take off the operation of the atmosphere, and not the attraction of gravitation, which is seen to act both in a vacuum and under atmospheric pressure. Yet I would ask the believers of this theory, what this *certain distance* is at which the atmosphere and gravity begin to exert their power. Beside this, they say that the addition of the *direct* impulse received from the explosion of the powder assists to produce *this change.* That is, if I understand

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them, the *direct* impulse, after a certain distance, helps to make the movement or course of the ball indirect. This is too contradictory for serious refutation. The rest of the doctrine is equally fanciful, and there is a want of precision in the use of terms, and the solecism of this passage, "when the velocity with which the ball *is passing is greatly diminished*," we leave to the reader's own judgment to unravel its meaning. I am astonished to see professor Ballingall cite this doctrine as rational, when it is directly in opposition to what he advances on page 226, and which we have examined. *There* he says, the resistance of bodies makes the motion of a ball curvilinear, and here he adopts the belief, that the resistance alone of bodies does not turn the course of a shot, but the atmosphere and gravity after a certain distance. I do not seek to incur the imputation of being thought unfair, and must acknowledge that the ambiguous language above quoted may be susceptible of another interpretation more objectionable than the one we have given, and on this account it has not been alluded to before. The idea is, that the motion of a ball is direct or in a straight line throughout all its course, but at first it does not revolve on its axis, but afterwards gains this motion, and if it strike directly against a body with this latter movement, it does not pass through the impinged body, but around it, or over it as a wheel. Here the assumption, that a carriage wheel and a cannon ball are similarly situated, cannot be admitted; for in the former case, the body comes between the wheel and the ground, or some other opposing substance, while no opposing body is offered in case of the ball. Let us waive this consideration, and apply an example to test the correctness of the theory. We all know that if a moving ball, whether revolving on its axis or not, strike against a body at rest, the ball either rebounds, changes the position of the impinged substance, alters its own course, or passes through the body. Either one or more of these effects, results from this collision. The earth revolves on its axis besides its motion round the sun, and according to the view taken by Larrey, Guthrie, Blane and Ballingall, if it struck a body at rest, the earth would revolve around it, and leave the body in situ. Observation and mechanical philosophy are opposed to this supposition. To account for the mysterious phenomenon of sudden death from the falsely conjectured wind of a ball, we must resort to other reasoning or different explanations. We need not bring forth such an array of mechanical philosophy.—Many cases I think bear more immediately on the point at issue.

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Sir A. Cooper, or some other great surgeon in London, mentions a case of sudden death without any visible derangement of the part impinged, and this fatal termination resulted from a blow which produced no laceration or even mark. These and similar instances of extinction of life, both from blows and cannon balls, must be explained by the shock given to the nervous system.

The abdomen has sufficient elasticity to resist a considerable impetus of a ball, especially if it strike obliquely. Should it, however, meet with a ball almost spent, and the direction of the impinging ball, be even direct or perpendicular to the abdomen, the abdomen may have sufficient elasticity to resist the entrance of the ball, and the impression is so sudden that the functions of this part, and of the whole system, are suspended and death ensues. Time has not been given for reaction to take place, and consequently none of the symptoms of inflammation can be visible.

ART. VI. *Case of Ligature of the Femoral Artery for the cure of Popliteal Aneurism; Hemorrhage from the Femoral on the 12th day; second application of the Ligature above the profunda; Hemorrhage on the 8th day, arrested by the compress:—cure.* By N. R. SMITH, M.D. &c.

IN August last, I was invited by my friend Dr. Altvater, of this city, to perform the ligature of the femoral artery, on a patient under his charge, for the cure of popliteal aneurism in the left ham. The subject, Lewis Curstor, was 30 years of age, residing in Exeter street, O. T. his occupation that of a scavenger; his habits intemperate; his constitution naturally good, but impaired by liquor, and recently by the secondary symptoms of venereal. He informed us, that he had been aware of the existence of the disease for nearly six months. It had now acquired the size of a small orange, pulsated violently, and was productive of extreme lameness and severe pain, especially in the leg below the knee. There also existed an incipient dilatation of the artery in the right ham. Deeming it imprudent to operate without resorting to preparatory measures, Dr. A. and myself resolved to have blood taken from his arm—to stop his grog—to put him at rest, and confine him to a low and simple diet for a week. While these means were being employed, the patient was visited by a Thompsonian quack, who quickly discovered

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that the disease was a very trivial affair, pronouncing it to be a swelling of a tendon, and promising to effect its removal in a few days by frictions, with some vegetable substance. This method was so much more agreeable than ours, that the quack was employed, and continued the application of his remedies for some eight or ten days. For some mysterious reason or other, however, his stimulating frictions were not attended with precisely the effects which he expected, for the tumor, instead of disappearing, increased, and the patient losing confidence, came back to us, and manifested a willingness to submit to any thing. We again directed low diet, aperients and blood-letting, and after a few days proceeded to secure the femoral artery.

The operation was accomplished in the ordinary way, though with some embarrassment, in consequence of the struggles and outcries of the patient, whose fortitude was not the most commendable. A single ligature of silk was employed. Perfect quietude was of course enjoined, and a meagre diet. Blood was also taken from the arm.

Every thing went on well for the first eleven days, the wound completely healing, with the exception of the canal occupied by the ligature. No pulsation could ever be discovered in the tumor after the operation; the temperature of the limb soon became natural; all pain ceased; and the patient felt himself so completely relieved, that he became impatient of confinement. We made him fully acquainted with the danger which would attend any muscular exertion, before the separation of the ligature, and he was visited and cautioned daily. On the 12th day, however, I was called to him, and informed that slight hemorrhage had taken place around the ligature. I then learned that he had been up during part of the day, walking about the house, and that he was in the act of sneezing from taking a pinch of snuff, when the gush of blood took place. He was also guilty of another exceedingly imprudent act, which shall here be nameless; suffice it to say, however, that the patient had a comely wife, and that there was but one bed in the house.

On reaching him, I found that the blood had ceased to flow, but that there existed a small tumor at the point where the ligature was applied. There was no pulsation, and no pain in the part; under these circumstances, therefore, I flattered myself that no further bleeding would occur, under the use of the compress. Dr. Altvater took blood freely from his arm, and a compress was applied. On the evening of the same day I again saw him, and found that hemorrhage had recurred—that the tumor

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had enlarged—was painful, and pulsated. We determined to delay till morning, and should hemorrhage be repeated, to perform the ligature of the femoral above the profunda. This necessity occurred, and I performed the operation accordingly, below Poupart's ligament, cutting both ends of the ligature close to the knot, as advised by Mr. Lawrence. The tumor at the seat of the first ligature had now acquired the size of the first, and after the application of the second ligature, I opened it freely, and discharged a mass of coagulated blood. Some of this fluid had insinuated itself along the sheath of the artery towards the groin, and had induced irritation in the parts around the vessel to which it had been necessary again to apply the ligature. The coats of the artery also, were evidently rigid from chronic disease.

All pulsation now immediately ceased in the traumatic aneurism, as did also the pain, in a few hours; the limb very quickly resumed its natural temperature, the collateral circulation seeming to be but little embarrassed.

Every thing appeared again to be going on exceedingly well, except that the wound did not heal by the first intention, as in the former case. The pulse rising, blood was again taken from the arm.

In the evening of the eighth day, I was called in haste to our patient, and informed that he was again bleeding copiously. Dr. A. reached him before me, and was making compression over the wound, blood having ceased to flow. The man was literally weltering in blood, the bed being saturated with it, and there being a pool of it upon the floor. His pulse was scarcely to be discerned—his countenance was cadaverous; he was restless in the extreme—the limb exceedingly painful as low as the knee, and destitute of all sensibility and vital warmth below it.

At first, the idea of securing the external iliac occurred to me, but on reflection, I declined it. I found that the separation of the ligature would be productive of the same consequences as before, and in that case, it would have been impossible to use the compress with the same prospect of success as on the femoral artery. I therefore applied a small piece of compressed sponge, within the wound, directly upon the wounded vessel, over this, a larger portion, and so on, covering the whole with a broad compress in the groin. This I bound firmly down with the spica bandage. When this bandage is applied, if the patient extends his limb, its compression in the groin, is increased; I

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therefore, desired the patient, if he felt any increased pulsation in the wound, or any flow of blood, to make an effort to extend the limb. Constitutional treatment was directed.

I scarcely expected to see our patient alive the next morning, but, to my great surprise, I found him comfortable. The early part of the night had been passed in a restless manner, but towards morning, he had slept quietly. The temperature of the limb was returning. From this time, our patient went on extremely well, no flow of blood again recurring. The compress was continued for two weeks longer, when it was removed, and the wound soon cicatrized.

The patient was subsequently put upon the use of sarsaparilla and the bichloride of mercury, for the cure of the supposed sequelæ of venereal. The aneurism in the left ham has now totally disappeared, and that in the right has evidently diminished. He has now returned to his labor, and is enjoying health and strength.

I committed an error in not depleting this man more freely after both the first and second operations, as was made manifest by the effects of the hemorrhage on the eighth day after the second operation.

ART. VII. *Observations on the Treatment of Febrile Follicular Gastro-enteritis.* By E. GEDDINGS, M.D., Professor of Anatomy and Physiology in the University of Maryland.

IN a preceding number of this Journal, we have considered somewhat in detail, the *Physiologico-pathological* characters of *follicular gastro-enteritis.* We have seen from the discussions into which we entered on that occasion, that this condition of the gastro-intestinal mucous membrane, not only constitutes the predominant feature of *cholera, confirmed diarrhœa, dysentery* and *cholera infantum,* but that it performs an important part in a large proportion of those *fevers* which have been denominated *essential* or *idiopathic.* Fever, whatever its character, we have attempted to prove, merely consists of an assemblage of phenomena arising from either a state of super-excitement, or actual inflammation of one or more of the tissues or organs; that it is not therefore an *entity,* but the "mere shadow or reflected image" of some local affection, and that the varying characters which these phenomena exhibit, are to be attributed mainly to the properties of the structures and organs primarily involved, and of those which become se-

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condarily implicated by an irradiation of the diseased influence from the part upon which it first seizes, to others which are directly associated with it by close and intimate sympathetic relations. Our investigations, moreover, have shewn, that although inflammation of any organ may give rise to the train of phenomena to which the conventional term fever has been applied, the symptoms of those which have been denominated essential or idiopathic, are identical with those which appertain to follicular gastro-enteritis; that their forming stage or prodromus is characterized by the same outward manifestations as that affection; that there is likewise a perfect correspondence in their march, and a close relationship in their intensity; that in the progressive implication of other organs, by the irradiation of the gastro-intestinal irritation from its primary seat, we have a constant correspondence in the march of the fever, characterized by the super-addition of a new train of symptoms according with the kind and degree of consecutive implication; that the several stages of gastro-enteritis, and the collateral affections which it occasions in the other organs and systems, thus characterized by corresponding external phenomena, consisting in various functional disturbances, constitute the varying characters of the fever; and finally, that this view is not only supported by the accurate correlationship between the march of the internal affections, and the external manifestations, but is furthermore confirmed by the conditions observed after death. There may be exceptions to these principles, but they are so few that they cannot, so far as general laws are concerned, be allowed to militate materially against their correctness.

If the views we have taken be valid, they naturally indicate a rational therapeutics; for having analysed the varying phenomena of the disease, and determined its character, as well by the successive stages of its march, as by the eventual consequences which it inflicts on the organization, we are furnished with a clear and unerring guide to direct us in the application of our remedial agents. If our pathology be correct, and we make an accurate appreciation of the properties and powers of our agents, we cannot well err in the application of them; and where the one is appropriately and accurately adapted to the other, we have in most cases, every reason to hope for a successful issue, except when too near an approach to disorganization has been made previously to our treatment having been instituted, or when previous suffering and a consequent impairment of the vital forces has so far enfeebled the recupera-

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tive powers of the system, as to render it incapable of bearing the operation of our remedial agents, or responding properly to their influence.

Having premised these remarks, we propose to furnish a brief exposition of the principles of treatment which we conceive to be rationally indicated by the pathological views we have attempted to establish, and which considerable experience has assured us, is the most successful in the management of febrile follicular gastro-interitis. Of course our observations must be confined to mere generalities, since to enter upon the examination of the special modifications exacted by the various accidental shades of the disease, would require more space than we can allot to the subject in this place. General principles, however, once established, can be easily applied to varying circumstances; and with a judgment properly disciplined, they can without difficulty, be adapted to all accidental contingencies.

In the prosecution of our discussion, we shall consider first, the treatment adapted to the *prodromus* of the disease: second, that which is proper during the existence of that period, which is characterized by a predominance of *gastro-enterical symptoms:* thirdly, the treatment of the disease after the cerebro-spinal centres have become extensively implicated; (the *nervous stage of Hildebrand:)* and fourthly, the management of the *convalescence.* The treatment of these several stages, it is true, cannot be properly separated from each other, inasmuch as they run together by insensible shades, and are never entirely distinct and independent. Yet as each of them exacts some modification of our therapeutical procedures, we have thought that we could render a more satisfactory exposition of the necessary variations of treatment, by considering the several stages under separate heads.

Sec. I. *Treatment* of the *Prodromus or forming stage.* In the *prodromus* or forming stage of febrile gastro-enterites, is included all that period which elapses between the reception of the morbific cause and the actual declaration of the febrile symptoms. It is of variable duration, being sometimes scarcely perceptible, and in other cases continuing several days. Nor is it constantly characterized by the same outward manifestations, although in the main the symptoms which attend it are sufficiently constant, to indicate with considerable accuracy the modifications of the organic acts of which it is composed, as well as their seat and general relations. It has been affirmed, that "it is characterized by a variety of feelings or sensations, which

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though manifesting a deviation from the healthy condition of the system, do not *constitute* any *definite state of disease.*" To this opinion we cannot subscribe. It involves in itself a positive contradiction. Every state of the system which consists in a deviation from its healthy condition, must of necessity, be as definitely and essentially a state of disease; as truly a pathological state, as that by which an organ is destroyed or its functions suspended. We therefore contend, that the prodromus of a *febrile gastro-enteritis* is as much a portion of that disease, as the febrile state itself, merely differing from it in degree, and in the fact, that the organ or structure upon which the malady has located itself, has not yet reached that intensity of sufferings, to enkindle, through its sympathies with the other organs or systems, that degree of super-excitation of their vital properties, which is necessary to develope the train of phenomena, to which by common consent we are in the habit of applying the term fever. We have elsewhere remarked,* that "if we regard the first manifestations of the development of a case of fever, we shall find that they are all such as can be clearly traced to a derangement of the digestive function. This is true, as well of those which are called premonitory, as of such as make their appearance at a later period. *The loss of appetite, the loathing of food, the desire of refreshing and acidulated drinks, the general languor, lassitude and uneasiness, all indicate either a state of congestion or super-excitation of the mucous membrane.* The functional acts of the stomach and intestines are impaired; and being unable to perform their usual offices in a proper manner, they proclaim their inability through their instincts, by the outward manifestations which have been enumerated. The ganglionic nerves which are spread out upon the mucous surfaces, are submitted to a state of super-excitation, which is not only manifested by the thirst and desire of acids, but also by the general *malaise* of the locomotive apparatus, the sense of languor and fatigue, and by the tenderness or super-sensitiveness of the muscles and articulations." "To these symptoms very generally succeed great precordial oppression, nausea, vomiting and tenderness over the epigastrium, all of which are unquestionable evidences of a still greater exaltation of the super-excitement, and consequent congestions of the gastro-intestinal mucous surfaces. They are not conditions of debility, because they are constantly exasperated by stimulants; and that they depend upon

* Vol. I. No. 1, p. 82.

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a state of super-irritation, or excitement of those surfaces, is not only manifested by the concomitant symptoms and the appearances exhibited on dissection, but by the relief afforded by those remedies which subdue irritation and inflammation."

To this we may subjoin a remark made by Southwood Smith, who entertaining views different in many respects from our own, may, in the present case at least, be admitted as impartial authority. "The only morbid condition of fever," says he, "of which we have any knowledge, and one which the medical art has any control, is that of inflammation. Although, as has been so often stated, it be not the primary febrile affection, as far as regards the order of events, yet it is at least, the primary affection, so far as regards the treatment, if it be not the sole affection that admits of treatment."*

If there be any truth in these remarks, it is evident that the prodromus of a disease or of fever, is a part of the disease itself,—that it is a definite morbid affection, and that in combatting it, the same principles should direct us, by which we are guided in the management of the more palpable consecutive conditions which supervene upon it.

If this truth were generally appreciated,—if attention were always paid to these premonitory symptoms, and a rational course of treatment directed for their relief, many a valuable life might be saved, and much suffering and distress would be averted. The prodromus of a disease, we repeat, is a part of the disease itself, and merely differs from it "in aspect and intensity, as an adult merely differs from a child in the fulness and perfection of his development."† Unfortunately, this prelude of danger is too often neglected, or the condition of the organs in which it consists is too often exasperated by the administration of excitants and tonics, under the erroneous impression that there is debility, or by emetics and cathartics, employed with the avowed object of removing *bile*. So completely have the influences of an erroneous medical pathology diffused themselves throughout all classes and ranks of society, that bile is regarded as the source of the greater part of our ills, the liver as a kind of pandoras box, and calomel as a universal purificator. An individual has committed a debauch, and feels himself unwell—bile is the source of all his difficulties, and to remove them, calomel or some drastic cathartic is im-

* A treatise on Fever, by S. Smith, M.D. p. 388, Philad. 1830.

† Broussais cours de Pathologie et Therapeutique generales, tome 2, p. 8, Paris, 1833.

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mediately called into requisition; or he has been operated on by the causes which are said to produce fever; he finds himself laboring under all the symptoms detailed above; bile is again the offender, and it must be expelled—or another course may be pursued. He feels perhaps the general *malaise* which precedes the open declaration of a fever, and obstinately determined to bear up against it, he resolves to triumph by a hearty meal, by a stimulating potation, or by violent exercise. But the suffering organs are overcome by the injury inflicted upon them—the irritation under which they are already laboring is exasperated, and the individual, in his well meant efforts to remove debility, expel bile, and war against the unpleasant feelings which he experiences, fans a latent irritation into an open form of fibrile excitement, exasperates a simple state of erethism of the mucous membrane into an intense grade of inflammation, and lays the foundation for extensive disorganization or irremediable lesions of the living structures.

It is precisely under these circumstances that, fifteen or twenty years since, it was almost the constant practice to administer emetics for the purpose of expelling bile; but now that science has made progress, and the wonder-working operation of calomel on the liver has been discovered, that article has measurably supplanted tartarized antimony and ipecacuanha, and has become of as familiar use, even in families, as common culinary salt. It is called into requisition on all occasions; is administered under all conditions and regardless of quantity, and although often successful in its operation, daily experience reveals its pernicious influence, under the ill-judged and empirical direction with which it is employed. It is very true that where a perfect revulsive impression can be developed, it will often break up the concatenation of morbid acts in which the prodromus of a fever consists, by exciting a new impression upon some remote point of greater intensity than that in which the diseased condition consists; but failing of this, it, as well as other active cathartics, emetics, or other agents of a similar character, always prove prejudicial, and frequently induce hazardous consequences.

How then, it may be inquired, is this prodromus,—this prelude of mischief, as it has been regarded,—to be treated? An answer is furnished by the pathological views which we have endeavored to inculcate. The pathological state is one of irritation involving parts important to life; it is a latent super-excitement threatening mischief, which, if suffered to run its course, or

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if exasperated by improper or perturbating remedies, will endanger the life of the individual.

The first indication is then clearly to avoid every source of irritation; to enjoin the most perfect tranquillity of both mind and body; the second to subdue the irritation already existing, and to prevent its further progress.

Whenever, therefore, an individual who has been exposed to the operation of the ordinary causes of fibrile follicular gastro-enteritis becomes affected with the symptoms which characterize the inceptive stage of that malady, instead of vainly struggling against it, or acting upon the illusory hope of overcoming it by expelling bile, or *emulging* the liver, he should confine himself to a state of perfect quietude, restrict himself rigidly to a mild farinaceous or unirritating diet, and at the same time, carefully avoid every source of irritation. This alone, in many cases, will be sufficient to avert the threatened mischief and restore the perfect integrity of the functions. Sometimes, however, more will be required. The bowels are generally constipated, the secretions are perverted, the fluids are unequally distributed, the skin is dry and rough, and the head is painful. The first may be overcome by enematæ, or by two or three drachms of castor oil, or by some other mild aperient. Drastic and stimulating cathartics should never be employed under such circumstances; for although they may often afford relief by revulsion and depletion from the intestinal capillaries, such relief is always obtained at the risk of an exasperation of the malady; and as we have a more rational, more efficient, and at the same time a less hazardous means of securing the same end, it will certainly be better to avail ourselves of its advantages, than to jeopard the life of our patient, by seeking to relieve him by a doubtful remedy. As adjuvants to the means already recommended, the warm pediluvium, rendered somewhat excitant by the addition of a small quantity of salt or mustard flower, may be very advantageously employed, as it will tend to create revulsion to the lower extremities, and thus divert from the abdominal and cephalic organs. Tepid ablutions to the surface of the body will likewise contribute to restore the healthy equilibrium, by inviting the circulation from the internal parts to the superficies of the body. In the mean time, the individual should restrict himself rigidly to a light and bland diet, and should only use for drink cooling, mucilaginous, or sub-acid drinks, religiously avoiding every thing calculated to excite inordinately the internal surfaces of relation.

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These precautions, properly persisted in, will seldom fail to accomplish all we desire, when instituted before the morbid process has advanced too far; and if resorted to in time, it will seldom be requisite to institute any other treatment. Nevertheless, in some cases, the aggressions committed by the inceptive acts of the disease are of a more formidable character, the local erethism of the mucous membrane is more intense, and the outward symptoms more urgent. It may also happen, that the malady has been suffered to make considerable progress, or that it has been exasperated by imprudence or improper treatment. Should there be considerable nausea or vomiting, much thirst, redness of the tongue, intense pain of the head and eyes, dryness of the skin, and tenderness of the epigastrium, with a general uneasiness of the whole system, a more energetic course of procedure will be called for. There is yet no fever, but there is a high degree of irritation or super-excitement of the gastro-intestinal mucous surfaces, constantly increasing in intensity, and threatening every moment, by radiating its influence to the neighboring organs, to give rise to a declaration of all those phenomena which constitute the proper febrile paroxysm.

Here, then, it will not only be necessary to avoid all sources of irritation, but to subdue that which already exists; and as danger is at hand, it can only be averted by prompt and efficient measures. Under this concurrence of circumstances, in addition to the course already recommended, it will be necessary to resort to the local abstraction of blood, by cups and leeches applied over the epigastrium, to cover the whole abdomen with warm and emollient fomentations, to appease the thirst by demulcent and sub-acid drinks, and in short, to call into requisition all the means, both direct and indirect, capable of subduing local irritation, and which are compatible with the condition of the patient. General blood-letting will not be called for, because there is as yet no general and diffused excitement of the circulation, but the disease is still local; it is an affair of the mucous capillaries, and as such can be best controlled by those agents which impress their principal modifications upon this portion of the organization. These means are cups and leeches, which not only prove beneficial by the abstraction of blood, but likewise by their revulsive agency.

By this course, early instituted and sedulously pursued, at least four-fifths of the cases of febrile follicular gastro-enteritis may be cut short in their very inception, and their further

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progress arrested. Unfortunately, these early indications of disease are too often neglected, or they are incorrectly interpreted, and the malady is allowed to make considerable progress, and to assume a more formidable aspect, before a proper attention to the case is awakened, and consequently, before the assistance of the physician is demanded.

But why, it may be asked by some, should the patient be submitted to all this discipline, when all his uneasiness can be removed by a single active dose of medicine? We reply, because his safety requires it. We are aware that there are those who speak exultingly of "tearing up disease by the roots,"—of cutting it *short in limine*, by an active emetic or a drastic cathartic. We have had considerable experience with this kind of practice, and we are free to confess, as we have already done, that it will often succeed; but painful conviction also compels us to avow, that it will also very often fail; and where it does fall short of the object, the consequences are always highly unfavorable. The march of the disease is accelerated by the violent perturbation, the intensity of the organic lesions is increased, the complications are multiplied, and very frequently, a train of alarming symptoms are induced. Few physicians of much experience have not had frequent opportunities of witnessing this truth. A patient complains of slight indisposition, to relieve which, an active emetic or a drastic cathartic is administered. But instead of the anticipated amelioration, he is the next day affected with violent fever, urgent thirst, red pointed tongue, tenderness over the epigastrium, prostration of strength, and the case advances rapidly to a typhoid or adynamic state, and in a short time to a fatal termination. Such cases are of frequent occurrence under this course of treatment, and we shall show, under our next head, why they are not oftener met with.—Upon this point, we may be allowed to quote the observations of an individual of vast experience, and profound philosophical views:—he remarks, "that although we may sometimes succeed with emetics, we should be cautious how we calculate with a surety upon their success. They are so little to be relied upon, that in a large majority of cases, about seven-eighths, the disease, after being slightly mitigated during a few hours, resumes its course, and acquires a new degree of intensity. When I was in the practice of treating this disease according to the *Nosographie Philosophique*, that is, by emetics, in almost all cases, on the day after the administration of the remedy, a train of nervous phenomena were developed. Myself and colleagues were

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so much accustomed to witness this result, that it was a common saying with us, on seeing an individual in the inceptive stage of gastro-enteritis, 'to-day we have an *embarras gastrique*, which to-morrow will be a profound state of adynamia.' This prediction was seldom falsified, and when it was not, the disease was rapid in its progress."*

This accords with our own experience. Hence we have been anxious to point out the dangers of a very common practice, and to inculcate one founded upon more correct principles, and which we know from experience to be successful. We have perhaps dwelt longer upon this division of our subject than its importance may seem to require. We have done so, because it is too much the practice to neglect, or make light of this stage of the disease, and many valuable lives are thus lost from carelessness. The maxim, *respice finem*, applies no where more forcibly than here, and however seemingly unimportant the prodromus of a fever may be, it should always exact the most vigilant attention.

Sec. II. *Treatment of the primary febrile stage of follicular gastro-enteritis, with predominance of gastro-enteric symptoms.*—Having prescribed that course of treatment which we conceived to be rationally adapted to the prodromus of the disease, we shall next define the plan to be pursued after proper febrile reaction has declared itself.

The open declaration of this stage is very generally preceded by a chill of more or less violence, but which varies greatly, as regards intensity and duration. In some instances, indeed, it is entirely absent. When it occurs, it should be met by the application of external warmth, warm diluent drinks, and revulsives. It will be unnecessary, however, to specify particularly the application of these agents. It must be modified to suit existing circumstances, always bearing in mind that the chill, though apparently characterised by great prostration of the bodily powers, is not a state of debility, but a condition arising from intense latent irritation, and consequent vascular congestions of important organs, by which their natural equilibrium and antagonism are broken up, and they are rendered unable to perform their healthy acts. The practice, therefore, of administering actively stimulating or exciting agents under such circumstances, is at variance with correct principles, and although sometimes suc-

* Broussais Cours de Pathologie et Therapeutique generales. Tome 2. p. 10. Paris, 1833.

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cessful, is very frequently productive of very detrimental consequences.

It is, however, with the proper febrile stage that we are most interested, because it is in that condition, we are usually first called upon to see the patient, and it is during its dominance that most of those organico-vital changes are developed which give to the disease the chief difficulties with which we have to contend. We have already endeavored to present a thorough analysis of all the phenomena of this stage, by a critical examination of its leading symptoms, and a determination of their relations with the organic lesions concerned in their development. We have represented that fever cannot exist without a local irritation, super-excitement or inflammation of some organ,—that it is merely a sequence of this condition, and is not itself a disease, and that so far as our present subject at least is concerned, if not farther, the seat of this inflammation is in the gastro-intestinal mucous membrane, from whence its influence is reflected into the other organs; into the system of glands, the heart and arteries, the sensorial apparatus, and various other parts closely associated with its primary seat. The whole treatment must be predicated upon these principles. To subdue local irritation or inflammation, to prevent their diffusion, and to obviate their consequences, or to remove them, are to be the ends constantly kept in view. There are a multiplicity of means which may be rendered available in the accomplishment of these objects, but as there are some of these of which it may be proper to speak more extensively than of others, we shall discuss their merits and application under separate heads.

a. Abstraction of Blood.—The most effectual means of arresting inflammation is unquestionably blood-letting, and we accordingly find that bleeding has been extensively practised from the earliest periods of the science, up to the present time, not only in the treatment of those diseases which have been regarded as *phlegmasiæ* proper, but likewise in the fevers called essential or idiopathic. The general concurrence of authority has been loudly proclaimed in its favor: all have admitted its efficacy, when guided by proper discrimination, yet while in this respect most parties have agreed, a variety of motives have been alleged for its employment. The advances of modern pathology and a more extensive experience have settled many of these difficulties, and the principal desideratum at the present day is to determine in individual cases how far it can be advantageously carried, what is its best mode of application to ensure its benefi-

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cial effects, and in what cases its employment will prove detrimental. Unfortunately authority is conflicting upon these points, experience is at variance, and a decision is difficult.

In the disease we are now considering, we are of opinion that there are but few cases in which it is not imperatively demanded, except where from neglect, the disease has been allowed to run on to disorganization, and where, consequently, the powers of life have become so much enfeebled, that the system would succumb under the loss of only a few ounces of blood. But in making this remark, it should be observed, that a difference must be made between general and local blood-letting. The former, from the strong impression which it makes upon the whole system, must necessarily be limited in its application to comparatively a small range of cases, while the latter may be instituted to a vast extent, and under a multiplicity of circumstances where general bleeding would prove detrimental.

As regards the employment of general bleeding in follicular gastro-enteritis, much must depend upon the character of the disease, its stage, and the nature and extent of its complications. We have seen that the attending fever may assume the form of bilious remittent, typhoid, adynamic, typhus, or low nervous fever. Experience has shown that these varieties of fever do not all bear the loss of blood equally well. Some require it to be freely drawn, while others are exasperated by the sudden abstraction of a few ounces. To explain this circumstance, various conjectures have been offered. By Giannini and some others, it has been assumed that fever is a state of *neurosthenia*,—a kind of compound condition, made up of debility and inflammation, which cannot bear any considerable abstraction of blood. Others, and amongst them, Southward Smith, have affirmed that there is something *peculiar* in the inflammation which accompanies fever, in consequence of which, the system succumbs more promptly under the loss of blood, than in common inflammation. General anatomy and pathology solve the whole mystery. The organic lesion, or molecular modification in which fever consists, or which constitutes febrile follicular gastro-enteritis, we have seen falls with its whole force upon the gastro intestinal mucous membrane. This is the centre of universal sympathy: it is the laboratory of the nutrient particles by which the animal organization is sustained: it is, moreover, a vast eleminating organ or surface: in fine, it may be stated in general terms, that the entire organization is engrafted upon it, and lives and acts in virtue of its efficient co-operation. Folli-

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cular gastro-enteritis attacks this structure, modifies its vital acts, or annihilates them entirely. It dries up, as it were, the whole fountains of nutrition, and from the injury inflicted by it upon the ganglionic system of nerves, and through them, upon the nervous system of relation, the sustaining powers are speedily broken up, and if blood be freely abstracted after all this mischief has been developed, it is easily conceivable how it may prostrate the energies of the system irrecoverably. This profound subversion of the acts of nutrition, together with the dependent circumstances, rationally explains why a follicular gastro-enteritis is capable of bearing a less abstraction of blood than a *pneumonia*, a *cephalitis*, or a *hepatitis*. These latter organs, though essential to life, have not the extensive and important relations of the former. Hence we find, that when they become affected with disease, blood may be copiously and repeatedly abstracted, without prostrating the vital energies. In febrile follicular gastro-enteritis, much also depends upon the part and extent of the mucous membrane affected, and as these circumstances impress corresponding modifications upon the outward febrile phenomena, there is an equivalent difference in their respective capabilities to bear the loss of blood. Hence that shade of the disease denominated bilious remittent fever, will admit, under ordinary circumstances, of freer depletion by the lancet, than typhus. In this latter form of the affection, there seems indeed to be such a direction given to the modifications of the organization which are directly concerned in the development of the malady, that at a very early period after its inception, the proper nervous pulp, or the nervous expansions which are incorporated with the affected part, become profoundly involved, as demonstrated by Tomassini and Reinhold, thus destroying innervation, and giving rise to a consequent enfeebling or breaking up of the nutritive acts, a perversion or suspension of secretion, and a marked deterioration of the vitalism, and plasticity of the blood, in the maintainance of which the integrity of the nervous system is so indispensable.

Be all this as it may, we have seen that in the treatment of febrile gastro-enteritis, to combat inflammation is the first and the main indication the physician has to fulfil. This must be done promptly and energetically. A feeble temporizing course will jeopard the life of the individual, and instead of breaking up the morbid process as it were, by a "*coup de main*," will only enfeeble the recuperative powers of the organism, while the malady will continue to progress. The patient should,

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therefore, be immediately placed in a cool and well ventilated room, which should be so darkened as to protect him against the stimulating influence of light; the most perfect quietude should be enjoined, and all sources of excitation, whatever they may be, should be sedulously excluded, in order that the system may be brought into the most favorable state possible for the salutary operation of our remedies. The duty of the physician is, in short, non modo seipsum exhibere quæ oportet facientum, sed etiam ægrum, et præsentes, et externa.

These things attended to, blood must be drawn, either by the lancet or by leeches or cups, always apportioning the quantity to the condition of the system and the ability of the patient to bear it, but never stopping short of producing a full effect, or making an impression which shall be strongly felt by the diseased organ and the system generally. This quantity must not be measured by ounces or pounds, but solely by the effect produced, and until the impression we desire to make is established, the blood must be allowed to flow. This will take place under the loss of very variable quantities of the vital fluid in different cases. In some, a few leeches will suffice; but in others, the desired effect will not be realized until several ounces or even pounds have been drawn from the arm by the lancet. If the excitement run high, and the individual be robust and plethoric, and especially if the physician be called at the commencement of the febrile stage, the lancet will generally be required, and must occasionally be repeated at the expiration of a few hours, if the febrile stage continue with unabated intensity. As has been well observed by an able writer, "the thing to be considered is the condition of the organs, the state of the system; not the ounces of blood to be taken, nor the number of periods at which it is to be removed. Abstract blood to the removal of inflammation, that is the rule; abstract blood at the very commencement of the inflammatory action; if you are in time to do it, at the very commencement of the febrile excitement. Then little blood will be lost, and the patient will be safe; and when this is done little more remains to be done."*

Generally speaking, the lancet cannot be used to a very great extent in the treatment of febrile follicular gastro-enteritis. But local blood-letting by leeches or cups can seldom be dispensed with. At the onset of the disease, if the case is at all urgent, from thirty to sixty or eighty leeches should be immediately applied to the epigastrium, and after they have dropped off, the whole abdo-

*Southwood Smith, loc. cit. p. 397.

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men should be covered with a warm emollient poultice, to encourage the bleeding from the bites, and to soothe irritation. If leeches cannot be procured, cups may be substituted, but are generally less advantageous as a means of depletion, though more so as revellents. Whether the one or the other be employed, the rule must be strictly observed, to draw blood until a marked impression is made on the system. It may be, and frequently is necessary, to adopt this course even immediately after the abstraction of blood by the lancet; for although the general bleeding will subdue or mitigate, in a great degree, the febrile excitement, it will not so effectually reach the local gastro-intestinal affection, as the abstraction of blood by leeches and cups. The effects of this local depletion are frequently of the most striking character. We have often seen the fever abated, a gentle moisture diffused over the surface of the body, the thirst assuaged, the nausea, vomiting and epigastric tenderness subdued, and the patient brought from a state of extreme distress and jactitation, to one of comfort and tranquillity. The tongue, from being dry and scabrous, contracted at the point, and red upon the borders, frequently becomes, in the course of a few hours, moist and expanded, shewing a reduction of mucous irritation, and a consequent re-establishment of mucous secretion. The bad taste of the mouth is often completely subdued; the sense of uneasiness and oppression about the epigastrium disappears, and such an amelioration is occasionally experienced, that the patient demands food, and considers his disease at an end. His situation, however, still requires the closest watching; and the greatest circumspection is demanded on his part to avoid a re-development of all his previous sufferings. The gastro-intestinal irritation is mitigated, but not subdued. Its elements still remain, and the slightest degree of inordinate excitation will tend to bring it forth with all its former intensity. It sometimes happens, indeed, even where no imprudence has been committed, that after this calm has endured for a short time, a renewal of the febrile excitement takes place, all the local distress is re-developed, the tongue dries, the stomach becomes irritable, the thirst urgent, the vomiting returns, the secretions are suspended, and in short all the troublesome symptoms recur. Occasionally, indeed, the mitigation experienced is not so considerable as we have represented, but the disease progresses, the relief gained by the bleeding being only temporary, and is in a short time followed by a marked exasperation. Here the leeches and cups must again be resorted to,

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and if the disease should still persist, they must be repeated as long as the condition of the patient will admit. Muscular prostration and even a dry and dark tongue do not contra-indicate local bleeding, other circumstances demanding its employment. These conditions are indeed often removed by the blood drawn by a few leeches or cups, and the patient gains strength under it, rather than becoming more prostrate.

But in recommending thus strongly the practice of drawing blood in febrile follicular gastro-enteritis, it is but proper to state that these remarks are intended to apply more particularly to the plethoric and the robust, or those in whom the nutritive acts are energetically performed, and have not been enfeebled by age or previous disease. They are also more applicable to the early than to the advanced stage of the malady. Still it must not be inferred that blood-letting should not be practised under these latter circumstances. It will not be so well borne, it is true, nor can it be carried to the same extent, yet the salvation of the patient will, in many instances, depend upon its employment; for although there is an apparent prostration of the vital energies, although the individual seems to be overwhelmed with a state of general debility, it is not a condition of pure asthenia, but one induced by the sufferings of an organ essential to life, and if these sufferings be not speedily relieved, this deceptive debility will increase, the organs will become more profoundly involved, the vital energies more impaired, and the disease will advance to a fatal termination. Blood must, therefore, still be drawn, care being taken to regulate the quantity by the ability of the individual to sustain the loss, and not to push it so far as to enfeeble the powers of life to that degree, as to disqualify them for setting up those acts which are necessary to restore the diseased organs to health. Neither does age contra-indicate the abstraction of blood, where the character of the disease demands that it should be resorted to. Although the aged do not sustain the loss of the vital fluid as well as the young and vigorous, their diseases often call for its administration, and are speedily relieved under its employment. It matters not, as has been well remarked by a distinguished writer, whether the hair be gray, black, or green, if blood-letting is indicated it must be employed. It must not, however, be pushed to the same extent as in the young and plethoric, and it is a fortunate circumstance that the disease seldom requires it to be prosecuted to the same extent.

It may perhaps be supposed by some, that we have exaggerated

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the value of blood-letting in the treatment of follicular gastro-enteritis, and we are free to confess, that the reports made by Andral and Louis do not seem to justify such a high degree of confidence in its efficacy. It should be remarked, however, that much allowance should be made for those reports. The patients were mostly persons who had been previously enfeebled by poverty and disease, and many of them had been laboring for several days under the malady, before bleeding was resorted to. The operation was in a number of cases performed at too late a period. In some it was not pushed to a sufficient extent, and in most it was not aided by proper collateral treatment. Still its advantages, under all these circumstances, were fully manifested in its tendency to shorten the duration of the disease, and conduct it to a favorable termination. Thus, it appears from the estimate made by Louis, that blood-letting instituted during the first ten days of the disease, and repeated twice to the extent of twelve ounces each time, in the bad forms of typhoid fever, was manifestly productive of benefit, inasmuch as of the cases which were not bled, the number of successes was decidedly less than where bleeding was employed. Where less than twelve ounces of blood was drawn, no benefit was realized, and in those cases in which the bleeding was practised after the tenth day, it seemed to be injurious rather than beneficial.

But while these reports do not seem to be favorable to the abstraction of blood, the experience of Bouillaud speaks strongly for its success. In the course of 1822, he treated more than three hundred cases of gastric fever at the hospital Cochin, mostly by blood-letting, demulcent and refreshing drinks, and an avoidance of every source of irritation. Under this treatment the mortality was only one in ten, whereas at the other Parisian hospitals it was one in six. Nearly the same ratio of mortality, as appears by the reports of Tweedie, has been observed at the London Fever hospital, where blood-letting is freely practised, especially in the early stage of the disease, and sometimes at an advanced period. For the year included in his report, the mortality was about one in seven, one-seventh; but he remarks, that since the retirement of Dr. Bateman from the institution, it has varied from one in five to one in nine and a half.

In inculcating the necessity of blood-letting, thus far we have only spoken of general bleeding and leeching and cupping over the epigastrium. It should be remembered, that we are here mainly discussing the treatment of that stage which is attended with a predominance of gastric symptoms. Any local determi-

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nations developed in the course of the malady, should of course be met by appropriate sanguinary depletion from the part. It may also be remarked, that when there is diarrhea, in addition to the other gastro-intestinal symptoms, the best effects will be derived from the application of a few leeches to the verge of the anus, while others are applied to the epigastrium.

While we thus earnestly commend blood-letting in those forms of fever which are complicated with follicular gastro-enteritis, we must caution against an abuse of the remedy. It is capable of doing much good; but improperly, or too extensively used, may also inflict irreparable mischief. It is in the first stage, when there is active excitement, that the free abstraction of blood is admissable. Under other circumstances, it must be cautiously and sparingly employed; yet small quantities may be drawn off by cups and leeches with advantage even at a late period, and where the individual is apparently much prostrated. We have had occasion to verify this principle in a number of instances in the Baltimore Infirmary, where during the last summer and autumn, cases of the kind under consideration were admitted in considerable numbers. Cups, however, were alone employed, as leeches could not be obtained, and the lancet was inadmissable, except in the first stage of the disease.

b. Emetics.—There was a period in the history of our science, when no remedies were more employed than emetics in the treatment of the disease we are now considering. Even the precepts of the father of physic strongly inculcated this practice. The aphorism "In perturbationibus alvi et vomitibus sponte ortis si quidem, qualia oportet purgari, purgentur, confert, et facilè ferunt," &c. while it may be regarded as the source of the common practice of administering emetics in fever whenever spontaneous vomiting occurs, has unquestionably slain its thousands. This perversion of the functional acts of the stomach is owing to an inordinate irritation or excitation of its structures; yet notwithstanding this truth has been acknowledged from the time of Erasistratus up to the present day, physicians have, with a singular perversion of reason, resorted to such means for its removal as are directly calculated to exasperate the condition upon which it depends. Even Hippocrates himself, although in the aphorism which we have quoted he inculcates vomiting, was not unaware of the existence of violent inflammation of the stomach in fevers of a malignant character, since he speaks expressly of "*Febres ex doloribus præcordiorum malignæ.*"

The same condition of the stomach and intestines, has been

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particularly adverted to by Bartholin, Baglivi, Hoffman and others of former times, and is acknowledged either as a cause or consequence of the fever which attends, by nearly all modern physicians. Baglivi, especially, strongly reprobated the perturbating practice which was commonly instituted by his contemporaries, and correctly referred the malignancy of the cases which they were called on to treat, to the mischievous operation of their remedies. Even Stoll, who perhaps, more than any modern physician, has insisted upon the importance of emetics in the treatment of bilious and gastric fevers, is constrained to declare *adfuere symptomata biliosa plura, attamen anti-phlogistica profuere sola.* Since pathological investigations have been more extensively pursued, and the phenomena of disease have been more closely scrutinized, a mass of facts has been accumulated, which fully demonstrates the importance of maintaining a strict regard to this feature in most of those diseases which have been denominated essential fevers, and the hazard frequently incurred by a neglect of it.

This position then admitted, what have we to expect from the effects of active vomiting, excited by the direct contact, in many cases, of a powerful irritant with a surface already intensely inflamed or highly irritated? Reason would seem to indicate that such a course of procedure could not fail to exasperate the disease, to increase the violence of the local affection of the organs, and to hasten the development of new complications. Experience also, unfortunately in too many instances, proves what reason suggests, and demonstrates that although emetics are frequently beneficial, they in many cases prove highly prejudicial.

But we are told that experience has satisfactorily established the advantages to be derived from this practice. We are free to confess that such is the case in many instances,—that under particular degrees and modifications of the disease, their operation is often productive of a marked amelioration of the symptoms, and that sometimes they serve to bring the malady to a speedy termination. But while we grant this, painful experience constrains us to declare, that in too many instances the opposite is the result: the patient instead of being relieved, has all his symptoms exasperated; his energies are prostrated; his pulse becomes smaller and more frequent and hurried; his thirst more urgent; his tongue dry; his stomach more irritable; and, his epigastric tenderness more exquisite and more widely diffused. A complete state of adynamia is indeed frequently induced in a few

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hours, and in many cases, the nervous stage seems to be hastened on by the operation of the emetic.

But, say our opponents, this will also frequently happen under an opposite course of treatment, and it cannot be induced by the emetics, because free vomiting is found in other cases highly beneficial, and they are often employed without inducing any such mischievous consequences. We deny that this formidable array of symptoms, so often follows a strictly anti-phlogistic course, properly adapted to the force of the disease, and the condition of the patient; neither is it true that because emetics are sometimes beneficial, they are not likewise very often highly pernicious. This disparity in their effects can, moreover, be very satisfactorily explained by a reference to the pathology of the disease, and the modus operandi of the remedy.

In the first place, what are the cases or what the conditions in which the salutary operation of these remedies have been generally realized? An appeal to the concurrent experience of all physicians will shew, that their best effects have been realized when they have been administered at the onset of the disease, or in those cases which present themselves under the slightest degrees of intensity. When the tongue is red and pointed, the thirst intense, the nausea and vomiting distressing, the epigastric tenderness considerable, the skin hot and pungent, and the pulse sharp, frequent and fretful, they almost invariably do mischief. They are also injurious when administered after the disease has been allowed to make some progress. How then are they beneficial under the first circumstances, and injurious under the second? This can be easily explained. The length of mucous surface liable to be directly affected with follicular gastro-enteritis varies from thirteen to twenty-seven feet. It is all capable of becoming involved; but at the onset of the malady, before it has become completely localized, and in mild cases, only a limited portion of this vast surface is materially implicated, and the part upon which the disease has fixed itself has not yet become so intensely irritated or inflamed, as to render it very liable to be dangerously exasperated by the operation of an emetic, prostrated as it is by other changes, developed by the influence of the remedy, which, to a certain extent, prevent the newly developed irritation from concentrating itself upon the seat of the disease itself. Suppose then that only a limited portion of the mucous membrane is affected, the tendency of the emetic will be, by acting on other portions, to make a strong revulsive impression, to excite a new centre of

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determination for the circulating fluids stronger than that already existing, and thus to divert irritation and circulation from the part primarily affected, and enfeeble or break up the disease. The fluids are at the same time determined to the surface, producing revulsion in that direction; the cutaneous transpiration is increased; the action of the heart and arteries is enfeebled; innervation is rendered less active; the mucous crypts pour out a large quantity of secretion into the stomach and intestines: a copious exhalation is also excited from the mucous surfaces, and the large glands which are appended to the tube, as the liver and pancreas, pour their abundant secretions into it, so that we have produced, besides other effects of the emetic, complete and extensive revulsion, free depletion, and direct and general sedation. If these results could always be realized, the propriety of giving emetics would be unquestionable, and we might fairly calculate upon their beneficial operation. But as they cannot, except in mild cases, and at the very onset of the disease, and as they are under other circumstances highly hazardous, since we cannot always discriminate between the cases in which they are admissable, and those in which they are not, it will be better to restrict their application to a limited range of cases, and wherever there is a doubt to abandon them altogether, and confide in antiphlogistics. Boisseau has indicated with some accuracy, the cases in which emetics may be ventured upon: "When no pain is perceived in the hypochondrium, even where strong pressure is made upon this region; when there is no uneasy sense of pain and numbness extending thence to the right shoulder; when the skin does not change its color; when the urine is not of a deep yellow and the excrements gray; when the tongue is uniformly and thickly coated; when there is no thirst and no pain of the epigastrium, even where strong pressure is made; no heat of the skin and no acceleration or hardness of the pulse; an emetic may be prescribed, provided the disgust, the bitterness of the mouth, and the other symptoms do not yield to antiphlogistic means."*

It will thus be seen, that these remedies must be almost banished from the list of our therapeutical agents in the treatment of gastric and bilious fevers, and the same remark will apply to those which have been denominated typhus, typhoid, adynamic, ataxic, nervous, &c. Should the stomach be loaded at the onset of the disease, by undigested articles of food, it may be made to

* Pyretology, p. 128.

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eject them by copious draughts of warm water, camomile tea or a few grains of ipecacuanha. But tartarized antimony or active vomiting must not be resorted to, except under the circumstances already designated.

c. Cathartics.—The practice of prescribing cathartics in the disease we are considering, like that of exciting emesis, can be traced back to Hippocrates, and has for its authority the aphorism already quoted. Differently estimated at different periods, it has in modern times, especially in England and America, become the most common method of treating those diseases denominated essential fevers. They were first prescribed with the avowed object of expelling concocted humors, and their employment has been since advocated upon various motives. Some have used them for the alleged object of expelling bile; others for bringing away mucus: some to *emulge* the liver; others to excite intestinal secretion and exhalation: some as debilitants, some as revellants, some as alteratives, some to correct vitiated secretions, and many with no definite object. No class of remedies, indeed, has been so much guided in their application by absolute empiricism and blind routine. Very often no means are taken to determine the pathology of the disease, or to fix upon any indication, but if an individual has a fever, a cathartic is generally the first and the last remedy; he is submitted to perpetual purgation, and his tortured bowels are allowed no repose until either the disease yields, or the constitution sinks under the aggressions made upon it by the powders and draughts of the physician. We rejoice to confess that there are exceptions, but we appeal to every candid individual who is conversant with the general practice of the profession in this country, and even elsewhere, if what we have asserted has not too much foundation in truth.

We would not wish to be understood as interdicting the use of cathartics in the treatment of these diseases, or as denying their efficacy when properly administered. All we desire is, that their employment should be directed by proper principles; that the pathological states of the system should, in the first place, be as accurately as possible determined; that clear indications should be deduced from them, and that the remedies should be adopted to the character and condition of the disease. When these rules are attended to, cathartics often become our most important agents; but the new lights which are every day revealed by pathological instigations and clinical experience constantly tend to diminish, more and more, the range of cases in which active

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purging is called for, or admissable, and to exclude from general use cathartics of a drastic or irritating character in the treatment of those fevers which are associated with a phlogosed or irritated state of the gastro-intestinal mucous surfaces.

From the pathology of follicular gastro-enteritis which we have laid down, the same remarks which have been made in relation to emetics will also apply to cathartics, but to a more limited extent; because, if the milder articles be selected, as they are less perturbating, they will not be so apt as emetics to inflict serious injury, and when prescribed with judgment and proper discretion, will often prove highly serviceable. It should always be borne in mind, however, that the intestinal mucous membrane is extensively implicated, and that although they frequently operate with impunity, they are exceedingly apt to exasperate the local inflammation, by coming in direct contact with its surface. This will be especially apt to be the case if drastic or irritating cathartics be employed.

Thus, as we have remarked above, the same objections may be urged against the operation of cathartics as emetics. The former like the latter, particularly those of an active or irritating character, cannot be rationally or even very safely employed, except at the very commencement of the febrile stage, or when the malady does not assume a degree of great intensity. An exception, however, must, under most circumstances be made in favor of aperients, and what have been vaguely designated alteratives, inasmuch as they are demanded in nearly every stage and variety of the disease, and seldom fail, when prescribed with judgment and proper discretion, to produce a beneficial effect.

Guided, therefore, by the same principles which we have laid down in reference to the employment of emetics, if called to a case of febrile follicular gastro-enteritis during the inceptive stage; where reaction has just taken place; where there is no great disturbance of the stomach manifested by troublesome nausea and vomiting, epigastric tenderness, red, pointed tongue and intense thirst, we frequently administer a cathartic, and occasionally repeat it until free alvine evacuations have been induced. The tendency of the medicine, under these circumstances, is to remove the irritating contents of the alimentary passages, to excite a copious secretion from the mucous surfaces and the collatitious glands, to give rise to a considerable exhalation from the intestines, to establish revulsion, and by these conjoint acts, to produce secretion of the other organs. In this

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manner the febrile phenomena are frequently arrested in *limine*, the local irritation is broken up or weakened, and the disease is speedily brought to a favorable termination. The same good effects may likewise be obtained, even at a later period of the disease, provided the symptoms which we have designated are absent. It should nevertheless be remarked, that even under these circumstances, drastics should not be employed, nor should the articles which are selected be too often repeated, or too long persisted in. There is perhaps no maxim more pernicious in the therapeutics of febrile diseases than that so often inculated, that cathartics should be continued until healthy alvine discharges are produced. The direct tendency of such agents, when very frequently repeated, or too long continued, is to produce a perversion or vitiation of the intestinal and glandular secretions; and we have in hundreds of instances, seen the morbid discharges thus induced, pronounced as an indication for further purgation. The obvious effect of such a course will be to exasperate the local affection by each successive dose of the medicine, to extend the irritation to other organs, excite new complications, promote disorganization, and, in short, to induce a complete state of typhoid or adynamic fever, which will eventually destroy the patient. To obtain all the good effects which we can reasonably expect from cathartics, they need not be often repeated or long continued. Frequently a single dose of moderate activity will suffice, and it will seldom be necessary to go beyond a few. For this purpose castor oil, some of the mild neutral salts, or a few grains of calomel, either combined with rhubarb, or alternated with castor oil, or some other mild article should generally be preferred. When these have been carried as far as the dictates of prudence will permit, if any thing remain to be accomplished by direct action on the bowels, it must be done by mild aperients, alteratives and enematæ. It will not be safe to push the catharsis farther, because the disease, if not arrested by this time, has become thoroughly localized; the organic structures have become deeply implicated; the state of super-excitement, irritation or inflammation of the mucous membrane transcends that degree which is compatible with revulsion; and the additional irritation excited by the cathartic, instead of tending to break up the focus of irritation in which the malady consists, by setting up a new centre of fluxion, will become concentrated upon it, and augment its intensity.

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Under nearly all other circumstances than these, we have found it most advantageous to abstain for the most part from cathartics, and to rely upon aperients, alteratives and other antiphlogistics. When there is much nausea and vomiting from the commencement, epigastric or abdominal tenderness, intense thirst, red, pointed tongue, frequent, small and fretful pulse, and dry, harsh skin, either very hot or exhibiting an inequality of temperature, together with a sense of oppression and internal heat about the abdomen, with great craving of acidulated drinks, we seldom venture upon a cathartic, except one of the mildest character, and for this purpose we have generally found two or three drachms of fresh castor oil sufficiently active for the fulfilment of the indication we have in view. We have here an intense degree of irritation of the mucous membrane, involving extensive complications; revulsion by the operation of a cathartic can no longer be reasonably hoped for; the crypts and glands are excited beyond that point which is compatible with secretion, and the influence of an active cathartic, instead of proving salutary, will prove highly detrimental. All we can expect from it is an evacuation of the contents of the bowels, which always in disease constitute a source of disturbance, and as it is always desirable to accomplish this with the least possible disturbance, castor oil presents itself as the most appropriate means. Its operation may be promoted by mild enemata, which will greatly tend to dislodge fæces from the colon, and thus contribute to evacuate the alimentary passages more effectually than could be done by the oil alone. These means should never be neglected at the onset of the disease, and next to the abstraction of all sources of irritation, and the general or local abstraction of blood, they should claim the first attention of the physician in the treatment of gastric fevers.

It will also be necessary, throughout the course of the disease, that attention should be constantly directed to the bowels. They should be gently moved from time to time by a repetition of the oil and the enemata, or by some other gentle aperient. Small doses of the sulphate of magnesia, tartrate of potash, tartrate of potash and soda, calcined magnesia, &c., are often employed for the same purpose as the oil, and if given in small doses, and not too often repeated, they often prove serviceable. We were acquainted with a venerable and successful practitioner of our country, who in typhoid fever, when there was drying of the tongue and other symptoms of mucous irritation, placed his principal reliance upon half drachm or drachm doses of sulphate

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of magnesia, in combination with small portions of ipecacuanha, and upon revulsives,—Bretonneau likewise represents that he derived much benefit from small doses occasionally repeated, of the sulphate of magnesia. We have generally preferred the citrate and tartrate of potash with a slight excess of alkali, but always refrain from administering them where the stools are watery and frequent. Indeed, we seldom employ these articles except in such small doses as scarcely to produce any aperient effect, and rather as refrigerants, alteratives and antacids than as laxatives.

Besides these means, after we have considerably subdued the irritation and moderated the febrile excitement by blood-letting, fomentations and other agents presently to be detailed, we avail ourselves of the advantages of those remedies which have been denominated alteratives. For this purpose we employ, according to circumstances, from one to three or four grains of calomel, five or six grains of hydrarg. cum creta, or the same quantity of blue mass, with some appropriate combination, once, twice or thrice in the twenty-four or forty-eight hours, regulating the quantity and the frequency of the repetition by the effect produced, and the condition of the patient. In combination with them, we frequently give two or three grains of the hydrosulphuret of antimony, which when pure, we have found one of the best antimonial preparations in this form of disease. The pulv. antim. cum phosph. calc., we have ascertained by repeated experience to be in many cases altogether inert. When the prostration is considerable, we substitute small portions of ipecacuanha for the kermes mineral or hydrosulph. ant., and if the stools are watery, we generally combine a few grains of chalk. At the same time that these means are employed, it will be advantageous to administer occasionally a drachm or two of castor oil, or half an ounce of olive oil, and to promote its passage through the bowels by mild mucilaginous enemata. The conjoint operation of these means will be especially valuable, not only in dislodging the hardened fæces which are apt to become impacted in the cells or *haustræ* of the colon during the progress of the disease, and in bringing away the vitiated secretions which are constantly accumulating in the whole track of the intestines, but likewise by exciting the natural or physiological acts of the parts which they influence, and promoting healthy secretion. Administered at too early a period, or while the irritation of the mucous membrane is intense, they would be injurious, but after this latter has been considerably subdued,

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they are highly beneficial. After a part has been for some time submitted to inordinate action, it undergoes various changes both as regards it vitalism and its structure. The former, though at first invigorated, may finally become enfeebled or, as it were, overpowered; hence in our attempts to restore health, under such circumstances, it often becomes necessary to bear this law in mind; our object being in the one case to control excessive action and keep it within proper bounds; in the other, to slightly invigorate the vitalism of the part, by submitting it to that degree of stimulation which is competent to sustain the healthy, nutritive and functional acts at first. Thus, in ophthalmic inflammation, all stimulating applications to the eye are highly injurious, but after the disease has continued for some time, it becomes necessary frequently to resort to means which are highly irritating, although the appearances of inflammation are still as strong as at first. Abundant exemplifications of the same law are furnished in many other diseases, but the fact is so self-evident to experienced practitioners, as to require no arguments or illustrations. The main point to be kept in view, in availing ourselves of this principle in the administration of alteratives, with the object we have to fulfil, is to never give the medicines in such doses or of such a quality, as to raise the excitement of the part above that point which is compatible with its physiological acts: pushed beyond that point, the modifications they produce become pathological, and many do much injury.* Hence medicines employed for this purpose, must be administered in very small doses, and must not possess very irritating properties when given in these quantities.

Such are the principles by which we are governed in relation to the administration of cathartic remedies in the treatment of fevers with predominant gastro-intestinal phenomena. They seem to us to be fairly deduced from the pathological states which we have to combat, and personal experience as well as that of others in whom we have great confidence, has tended to impress us with the conviction of their justness. We are not unmindful, however, of the wise admonition of the father of physic, "*experientia fallax, judicium dificile,*" and as many entertain very opposite views, founded, as they also assert, upon experience, it is impossible all of us can be right, and it is possible we may be deceived. Upon this point, however, there

* S. Jackson, Cyclopædia of Pract. Med. and Surg. part 3, art. Alteratives. Philad. 1834.

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seems to be this difference between us—our experience coincides accurately with principles fairly deduced from the physiological and pathological laws of the animal economy—theirs is at variance with these laws in most essential particulars, and conflicts with what they themselves avow as the objects by which we should be guided in the treatment of disease. Thus, they affirm (at least many of them) that the first link in the chain of causation in a fever, after the reception of the morbific impression, is a debility of the sensorium—upon this they assume (but cannot prove) a general reaction of the vascular system, as a direct consequence. But how debility of the sensorium can give rise, as a direct consequence, to general vascular excitement, we confess we are unable to explain, nor have those of whom we have asked information been more successful in their endeavors to furnish a solution of the difficulty. If this debility of the sensorium were really the first link in the chain of morbid concatination, its appropriate remedy would be stimulation, yet we have shewn (and universal experience has demonstrated the same thing) that stimulation tends directly to develope the febrile excitement. Again, they admit the existence of the lesions of the mucous membrane, of which we have spoken, but contend that they are a consequence of the general febrile excitement. In this respect then, they are likewise inconsistent with themselves; for whether consequence or cause matters not—they are present; they constitute an appanage of the disease; they progress as it progresses, and finally lead to disorganization or annihilation of the vital properties, unless arrested in their career. They admit all this, yet violent inflammation of the mucous membrane, terminating in pulpy disorganization, ulceration, gangrene, and perforation of the stomach or intestines are matters with them of trivial moment. When we express our fears that emetics, drastic and irritating cathartics, and other perturbating remedies will exasperate all these conditions, they smile at our apprehensions, and wonder at our credulity. They cry out experience, experience—when all these facts are staring them in the face, and conflicting directly with what they proclaim as their experience. They tell us that in the treatment of fever, we are to cautiously avoid every source of irritation, that the ingesta and circumfusa must be religiously attended to—that nothing irritating must be taken into the stomach either in form of food or drink, that heat, light, and noise must be carefully withdrawn—that nothing but cooling and refreshing drinks should be allowed—yet after all

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these injunctions, they do not hesitate to commit a most palpable violation of them. They throw irritating emetics into the stomach. The bowels are tortured from day to day, and from hour to hour, with cathartics of the most drastic and irritating character—perpetual purgation is kept up with calomel in immoderate doses, scammony, gamboge, colocynth, jalap and even croton oil; and this course is too often kept up until the system, worn out or the organs destroyed by the injury inflicted upon them, succumbs, or destruction is only averted by the timely development of revulsions. Appealing then to experience as the ultimate touchstone, which is most to be relied on,—that which reconciles itself with principles, or that which is vague and empirical?—that which co-ordinates itself with the fixed and immutable laws of the animal organism, or that which spurning these laws and contemning the principles of logical induction, is graduated by nothing more tangible than mere hypothesis? An individual who had been several days laboring under an attack of dysentery, and who had been treated by blood-letting and mercurial purges, continued hourly to grow worse, until he presented a state of extreme emaciation, a peculiar burning feeling of the skin, low delirium, sordes on the teeth, and a tongue black, dry, and so thoroughly divested of moisture as to appear as though it would break under the fingers. The urine was scanty, and the discharges from the bowels small, offensive and watery. Every symptom threatened speedy dissolution. *Two drachms of calomel and thirty grains of aloes* were directed every two hours, to be continued twenty-four hours, or longer if necessary, until a proper impression should be made on the system. Six hours after the adoption of this course *a hemorrhagic action from the liver and intestines was established, by which a large quantity of coagulated blood was discharged. In twenty-four hours, fourteen hundred and forty grains of calomel, and three hundred and sixty grains of aloes were administered to the patient.* A rapid amelioration of all the symptoms ensued, but to render assurance doubly sure, *small* doses of twenty grains were continued every four hours to keep up the already excited secretions. The patient recovered, and has since enjoyed the most robust health.

Here is successful experience; but upon what principle was the practice founded? It is alleged, to make an impression on the system? And if so what kind of impression was desired? Was it to awaken a revulsive impression? Safer and more efficient means could have been adopted for that purpose. Was it to

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excite a profuse hemorrhage from the liver and intestines? We suspect not; yet to the conjoint operation of these two causes, viz: revulsion and hemorrhage was the patient probably indebted for his recovery.

This may tend to illustrate the value of experience. Here we have a most formidable case of disease, successfully managed by a particular course of treatment; therefore all similar cases should be treated in a similar manner; yet we are much inclined to doubt whether many would be disposed to imitate the practice pursued in this instance.

But if the successful issue of the case can be explained in accordance with the known laws of the organism, or as we have represented, by revulsion, and depletion from the irritated vessels, it may be urged that the treatment was founded upon correct indications, and ought to be followed in other cases. This we may also be allowed to doubt, and for this reason; that from the interpretation of the phemonena of the case which we have attempted to make, we are led to conclude that it presented pathological conditions incompatible with the therapeutic procedure adopted,—which in a majority of cases would, under such a perturbating course have ended fatally, and which at the same time, might have been very rationally combatted by a very different course of procedure,—not involving such hazardous consequences to the individual, and even holding out to the practitioner a greater prospect of success. What, we will venture to inquire, would have been the success in the same case of fifty, sixty, or even a hundred leeches, if so many were required, to the abdomen and the verge of the anus, warm emollient fomentations and injections, mild demulcent drinks and revulsives to the extremities, or even to the walls of the abdomen? We are ourselves inclined to think, but this is mere matter of opinion, that this practice would have been more promptly successful; that the injury inflicted upon the organization would have been comparatively trifling, that a solution of the disease would have been secured, without the necessity of developing an artificial *hemorrhagic action* from the *liver* and *intestines*, and finally, that the secretions would have been restored and maintained without the agency of *small* doses of *twenty grains* of *calomel* every four hours to keep them afloat.

We consider this case to be one of inestimable value. It involves principles of great importance in relation to both pathology and therapeutics. We have noticed it thus minutely, not from any disrespect to the gentlemen concerned in its treatment,

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one of whom we have the pleasure to know and respect, but from the desire of establishing a principle. That gentleman availed himself of this very case to controvert some of the doctrines inculcated in this paper, and although it may appear a little paradoxical, we confidently appeal to it in confirmation of our principles, and as an evidence of the fallacy of that kind of experience which is so often brought forward, to prove that the doctrines we have adopted are erroneous.

It will thus be seen that we restrict the employment of active cathartics, in the treatment of those fevers which are attended with a preponderance of gastro-intestinal affection, to much narrower limits than is generally allowed. We do not prohibit them, but we are cautious in their administration, being always careful to confine their application to those cases and conditions in which the disturbance occasioned by them will not be likely to prove injurious, and under all other circumstances confining ourselves to aperients and alteratives. But in inculcating this course, we have admitted that a very opposite one very often succeeds equally well. This we have attempted to explain, and we think that in doing so, we have shewn that the arguments deduced from this source, instead of militating against the correctness of our views, go far to confirm them. We have often in the very disease we are considering, as well as in dysentery, and even in the advanced stages of both, seen a single large dose of calomel under particular circumstances, productive of most signal good effects. This we have observed too, even where there was great prostration of strength, and a condition of the system which would seem almost to interdict the administration of so large a dose of the medicine, lest it should destroy life by the activity of its operation. We would offer the following explanation of the circumstances: In such cases the onus of the disease has implicated the lower part of the small, or some portion of the large intestines. Its intensity has frequently been considerable, but has not yet advanced so far as to give rise to pustulation or ulceration of the mucous membrane. At the same time, the stomach, and the upper part of the small intestines have escaped, or participate but slightly in the morbid process, except so far as they may be disturbed through their sympathetic relations with the part affected. What then will be the effect of a scruple dose of calomel administered in such a case? Δύο πόνων ἅμα γίνομενων, μη κατὰ τὸν αὐτὸν τόῶον, ὁ σφοδρότερος ἀμαυροί τὸν ἕτερον; *of two affections developed in different parts of the body at the same time, the more intense will obscure the other*, is a law laid down

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by Hippocrates, and established by universal experience. Our object here is to make a new impression on the stomach and adjacent parts, of greater intensity than that which already exists in the intestine, with the view of diverting irritation, and the consequent determination of blood from the latter point, until it shall have an opportunity of regaining the integrity of its vital acts. Calomel is a powerful irritant; we throw a large dose of it upon the stomach to produce this desired impression, because a small dose would be too feeble in its action to make an impression equal to the intensity of the pre-existing disease: so soon as the intensity of the impression made on the stomach and adjacent parts by the calomel attains a degree greater than the disease, irritation and consequent fluxion takes place to that organ, and is in the same ratio diverted from the intestine, the recuperative energies of which being thus disembarrassed, are enabled to ward off the malady. The result of this is a strong act of revulsion, and to render the effects of this still more perfect copious secretions are elicited from the stomach, the duodenum, liver, pancreas, &c. by which considerable depletion is accomplished; and simultaneously with this, there is developed a state of general sedation of the remote organs, because of the greater part of their irritation being concentrated upon the part which is most intensely affected. Thus we have revulsion, depletion and sedation, all concurring to produce the effect. Revulsion, alone, it is manifest would not be sufficient in many cases to produce this change, otherwise, wine, brandy, or any powerful stimulus would succeed as well as the calomel. The consequent augmentation of secretion seems to be an important condition, hence that article, tending as it does in a peculiar manner, to act upon the stomach, and especially the duodenum and the collatitious glands, and promoting their secretions, presents itself as the most appropriate agent. So completely is the effect sometimes produced, under a favorable concurrence of circumstances, that the calomel will remain in the system for hours without producing any appreciable disturbance, or exciting any evacuation, but will at the expiration of that time bring away one or more copious muco-bilious stools, mixed with more or less feculent matter. We have heard those who had witnessed this effect express themselves at a loss to furnish a rational explanation of the phenomenon. We are disposed to attribute it mainly to the intensity of the impression made upon the upper portion of the tube, which is so great, that the susceptibility or excitability of the lower part is, for the time being, so far

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diminished by the completeness of the revulsion as to be incapable of responding to the influence of the small quantity of calomel which may chance to come in contact with it. Hence there are no evacuations, so long as this condition of things continues, and they only take place after the return of this susceptibility, the activity of the primary impression of the medicine higher up having in the mean time become somewhat enfeebled.

This also explains the difference between the effects of moderate and large doses of calomel under the same circumstances. The former have been generally said to irritate more than the latter, hence it has been affirmed that very large doses exercise a direct sedative influence upon the parts with which they come in contact. The explanation of the difference is easy, according to the principles we have adopted. Each small dose excites more or less irritation in the alimentary canal, but this being feebler than that in which the disease consists, the latter will still maintain the ascendancy, and this new irritation or excitation occasioned by the calomel being consequently too weak to create revulsion, will become concentrated upon the disease already existing, in accordance to the Hippocratic law which has been quoted above. It is thus, that we frequently find a disease in this situation exasperated by every successive moderate dose of calomel, and speedily ameliorated by one or more doses of twenty grains.

But while we are fully aware of the advantages which may frequently be derived from this practice, and while we have dwelt thus minutely upon the subject, with the hope of explaining the principles upon which they are founded, we must be permitted to caution against its frequent adoption. The cases to which it is applicable are exceedingly limited, and the difficulty of discrimination is so great, that it is often, nay, generally impossible to decide when we shall be safe in adopting it. Should the intensity of the malady implicate the stomach and duodenum, its chances of success will be exceedingly precarious, and its liability to inflict irreparable injury very great; and this will be still further increased, when these organs are actively inflamed, as is very generally the case in bilious remittent, and yellow fever. Considerable opportunities of observation in these diseases have amply convinced of this fact. We have often seen speedy relief afforded by the liberal administration of calomel, but seldom, except when the medicine was successful in promoting copious secretion from the mucous crypts and follicles, from the liver, and from the other neigh-

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boring glands. Here the free elimination of fluid more than compensated for the irritation of the remedy, and this aided by revulsion and general sedation saved the patient. Where no such effects were produced, the medicine proved injurious, and tended manifestly to hasten the fatal termination of the disease. The effect of a few doses of calomel will, however, be sufficient to enable the experienced practitioner to judge whether its operation will be likely to prove beneficial. When he finds that all the symptoms become progressively exasperated—the tongue dry, pointed, and red upon the borders, the stomach more irritable, and the epigastric tenderness greater, our advice would be "*siste gradum,*" as every subsequent dose will increase the injury he wishes to repair, and relief must be sought by a different course.

These are our views in relation to the use of cathartics in the form of disease which we are now considering. We have stated them somewhat fully, because we have been desirous of reconciling as far as possible, two very opposite extremes in this part of therapeutics. The French, confessedly the ablest pathologists in the world, are in one respect bad practitioners. Their dread of the bad effects of cathartics, deprives them of their advantages under many circumstances, where they are capable of rendering essential service The English and Americans, on the other hand, though inferior as pathologists, are in this respect, at least, superior as practitioners. But it is to be feared that they, in their great partiality for cathartics, often administer them without proper discrimination, and without a due regard to the pathological condition which it is their object to overcome. This was formerly more the case than at the present time, and we are inclined to think that a revolution is gradually taking place, which eventually will lead to the adoption of a medium course, embracing the advantages of both extremes, and excluding their disadvantages.

d. Refrigerants, contra-stimulants or means capable of producing sedation. There is a class of remedies much employed in the treatment of febrile diseases, in relation to the operation of which much difference of opinion has existed. They have been denominated refrigerants or cooling remedies, sedatives, contra-stimulants, &c. according to the opinions entertained of their effects upon the organization. Some have attributed their efficacy, to their faculty of diminishing animal temperature or conveying off redundant heat; others to the development of an impression the opposite of stimulation, and some to their capability of pro-

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ducing a sudden shock or commotion of the system, which tends to break up morbid action, and thus overcome the disease. This latter power, however, if it exist, must be confined to those which act upon the surface of the body, as for example cold water applied in the form of affusion, or douche. The Italians may be placed at the head of those who advocate the second opinion, and we shall presently see that the explanation offered by them is by far the most rational. They have denominated the agents in question contra-stimulants, of which they enumerate a great number; but to represent the condition developed by such remedies, the term sedation is by far more appropriate, as it conveys a clearer idea of its character.

Amongst these remedies, cold unquestionably has the first claim upon our attention. Cold water in its different forms has long been a popular remedy in the treatment of febrile diseases. It was extensively employed by the ancient physicians, both internally and applied to the surface of the body; and its virtues seem to have been well known to the profession during the middle ages and subsequently. In more modern times, it was used with signal benefit by Hahn, in an epidemic fever which prevailed with frightful mortality in Silesia; and Samoilowitz obtained results not less salutary from its use in the plague of Moscow. He even employed ice in form of frictions to the surface of the body,—a practice which has been recently pursued to a very considerable extent in the treatment of epidemic cholera. We can form some estimate of the benefits obtained from it by the former of these individuals, from the recital of his own case, which will also shew that he did not restrict its employment merely to the removal of cutaneous heat. "The continued ablutions," says he, "by which I had been hitherto refreshed, were not neglected on that very day on which I was thought to be dying; for although I was cold all over, bathed in cold sweat in such a manner as if I had been laid in melted ice, the ablutions were notwithstanding performed on me, my most dear spouse executing the office of washing off this death-like moisture. And I solemnly aver that I never failed to experience refreshment, at least for a short time. When the pores of the skin were cleansed by the means stated, a free perspiration or moderate sweat was the consequence, insomuch that the constriction of the surface seemed to be more readily and effectually relieved by abstersion with the sponge, than by the power of any internal remedy."*

* Currie's Medical Reports, &c. vol. 1. p. 82.

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But while cold water was frequently employed internally as a remedy in the treatment of fever, and by a few externally, its efficacy, used in the latter method, was not fully known and appreciated until it was demonstrated by Wright, Currie, Jackson, Gregory, Brandreth, McClean, and more recently Giannini. At present its claims to confidence are perhaps as well established as those of any remedial measure, yet from the vague and indefinite views entertained by many practitioners relative to its modus agendi, and the difficulty of discriminating the cases and conditions to which it is applicable, its benefits are not fully realized, and it is frequently not employed in cases where it might produce valuable results.

Those who have regarded cold water as a mere refrigerant or remover of animal heat, have restricted its application to bounds altogether too limited. Hence, if we were to follow the rules prescribed by Currie, who has been one of the most zealous advocates of the remedy, we should be deprived of its agency under many circumstances where it would be invaluable; because we should be obliged to limit it measurably to such cases as are attended with high vascular excitement generally diffused, and great exaltation of animal temperature. A more rational conception of the modifications it is capable of producing upon the living solids, will, however, render it much more extensively available, and point it out to us as a valuable adjuvant which may be administered in some form or other, under almost all circumstances where inordinate excitement is to be subdued, whether it be generally diffused, or confined to narrow limits.

Setting aside all theory, universal experience demonstrates that cold is a powerful debilitant; that its direct tendency is to enfeeble the vital powers, and consequently to diminish vital action. This it does in different degrees, according to its intensity, the form in which it is applied, and the condition of the individual at the time he is brought under its influence. Under a great degree of intensity, we know that its operation is sufficient to destroy life, while in moderation, its impression upon the organization is perhaps one of the most grateful it can experience.

In considering its therapeutical application in reference to the affection now under investigation, we must take into account the different forms in which it may be administered, and the particular adaptation of each to the condition of the organization which we are desirous of removing.

We have already spoken of the importance of placing the patient in a situation where he can have the benefit of a free

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circulation of cool air. Next to this in importance is the allowance of cool drink, in such quantities as may be sufficient to allay thirst, care always being taken to prevent such quantities being taken as will oppress the stomach, and occasion an unpleasant sensation of distension about that organ. The coldest water that can be obtained will generally be the most grateful to the patient and most soothing to the excited organs, and when the thirst is urgent, and the febrile heat considerable, the best method will be to allow the individual to hold small lumps of ice in his mouth, from time to time, until they are dissolved, or even to swallow the ice in small quantities, so that it may act directly upon the excited mucous membrane, and through its sympathies, upon the other parts of the organization. Iced water, iced lemonade, or the coldest water mixed with any of the mild vegetable acids which may be palatable to the patient, will constitute in like manner, a pleasant method of administering cold internally, and there are few cases in which, during the state of febrile excitement, they will not prove highly beneficial. Unfortunately a deep rooted prejudice exists among the common people against the use of cold drinks in fever, and we have occasionally seen physicians influenced by the same erroneous views, confining their patients rigidly to warm drinks, when they have been consumed as it were by thirst, and oppressed and overcome by a sense of internal heat, which nothing but cool refreshing beverages can appease. Such a practice is both irrational and cruel. It is at variance with the open declaration of the wants of nature proclaimed through the organic instincts, and should never be followed, except when from some condition of the disease, or some peculiarity in the situation of the patient, cold drinks are contra-indicated. Such a concurrence of circumstances is rarely met with, and while the state of high irritation and febrile excitement continue, cold will in a large majority of cases operate beneficially. We have seen it appease the urgent thirst, assuage the overpowering sense of internal heat, quiet the irritability of the stomach, diminish the action of the heart and arteries, tranquillize the nervous erethism, abate the heat of the skin, bring on a genial diaphoresis, quell the jactitation and uneasiness of the patient, in short, induce a general state of sedation, and insure a state of comfort and freedom from suffering, which could be brought about by no other remedy.

There are, nevertheless, individuals, who, from peculiarity of idiosyncrasy or some other cause, cannot indulge in cool drinks during the course of the disease, without experiencing consi-

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derable distress of the stomach and bowels, and an aggravation of other symptoms. The same thing is observed in many other diseases; it is seen in ophthalmia, in phlegmonous and erysipelatous inflammation, and frequently in gout and rheumatism. Many of these affections it is well known, are benefited by cold applications, but there are some in which they do harm, and which are materially relieved by those of a warm character. This apparent paradox will admit of the application of the Homoöpathic maxim, *similia similibus curenter*, as well as that more generally acted upon, *contraria contrariis*. The cases in which warmth is most soothing should be merely regarded as exceptions, not impairing the validity of principles, while the administration of cold should be adopted as a general rule of practice, only to be departed from where it is found to disagree with the individual.

But while the agency of cold taken internally is thus valuable, it is perhaps still more so when applied to the surface of the body. We have already represented that this is an ancient practice. Antonius Musa is said to have cured Augustus Cæsar of a serious hepatic affection by cold applications after warm ones had been, for a length of time, used in vain; and in commemoration of this achievement a bronze statue was erected to him by the Roman people, which was placed by the side of that of Esculapius. Celsus recommended frictions with cold water and oil during the course of the fever, and besides prescribing copious draughts of cold water, he directed that vine leaves wet with that fluid should be kept applied over the region of the stomach. Galen having previously bled the patient freely, required him to drink cold water until he grew pale, and became covered with a free perspiration, which generally ended the fever; and Avienna not only applied snow to the extremities, but had the whole surface of the body bathed with cold water.

But while cold has been employed in the treatment of fever at all periods, it is to be regretted that it has been so seldom directed by proper principles, and that it has been so frequently employed under circumstances contra-indicating its administration. Instead of regarding it as a direct and powerful debilitant, capable of producing a diminution of excitement, quieting nervous erethism, and tranquillizing the action of the heart and arteries, some have employed it merely with a view of diminishing excessive heat, while others have either regarded it as a tonic, or have imagined that its efficacy depends upon a

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kind of shock made upon the system, by which the train of diseased actions is immediately broken up. But if we reflect for a moment upon the origin of the excessive heat which constitutes such a prominent feature in febrile affections; if we bear in mind that it is not generated in the lungs exclusively, and merely by a play of chemical affinities, but that it is evolved in the whole capillary system, by the chemico-vital acts which are concerned in the processes of nutrition, secretion, organic decomposition, &c.; and that in all these acts, the nerves as well as the blood-vessels have an important participation, we shall not only be convinced of the futility of many of the opinions which have been advanced in relation to the modus operandi of cold, but shall be enabled to explain its effects upon clear and rational principles. Under the influence of the natural physiological excitation in which health consists, this process of calorification is maintained in a state of equilibrium, and presents but slight variations; but when it becomes modified and perverted by disease, this equilibrium is destroyed; excessive or pathological excitation takes place in a part or the whole capillary circulation; the nervous susceptibility becomes morbidly exquisite; the molecular compositions and decompositions are modified; the blood itself is changed in its properties; new combinations are formed; and with these changes, the evolution of animal heat, which is immediately dependent upon them, undergoes corresponding modifications. It may become excessive over the whole surface of the body, or it may be preternaturally developed at some points only, while at others it is even below the healthy standard. In other cases, however, it is a mere consequence of the condition of the organism; it is merely the result of a state of super-excitation of the tissues modifying their vitalism and their textural properties, and is consequently not itself the condition to which our remedies are to be directed, but only serves as an index to point to the state of the vital acts developed by the disease, and which it is the object of our therapeutical procedures to overcome. Excessive calorification is the consequence of a state of erethism of the organization, and cannot be removed except by subduing its cause. We do not, therefore, remove heat by the application of its opposite quality, because it exercises any influence on the heat itself, but because cold being a direct debilitant, subdues the excessive excitement of the tissues by which it is developed. Whether, therefore, the cold be applied to the surface of the body or taken internally, its effect is in many respects the same; the

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principal difference being, that in the latter case it not only diminishes the erethism of the mucous surfaces, and by sympathy, that also of the other parts which are associated with them, but is absorbed, and modifies the circulating fluids, influences the secretions and exhalations, and perhaps produces some change in the actions of the remote organs and tissues.

But it must not be inferred from the tenor of these remarks, that augmented excitation of a tissue is always productive of an increased evolution of animal heat. There are many conditions of the system in which no such increase of animal heat takes place, notwithstanding the evidences of the state of erethism of which we have spoken, are unequivocal. Some facts render it probable, that the nervous expansions or terminations are the parts most materially affected in this condition; that from disturbance of the reciprocity of the vital acts, notwithstanding inordinate excitations of the sentient extremities of the nerves, there is a defective capillary circulation in the part; and this indispensable condition of the generation of increased temperature being absent, the surface of the body will be cold, although exquisitely susceptible to impressions. This defect of sanguinous determination to the surface may depend upon a dominant stimulation of the mucous membrane keeping up the tide of the circulation in that direction, and consequently diverting it from the external surface; or it may perhaps arise in some cases from an inability of the heart to propel the fluids with sufficient energy to drive them into the capillary circulation, thus leaving the capillaries, as it were, in a comparative state of vacuity, notwithstanding they, as well as the corresponding nerves may be in a state of super-excitation. While we are disposed to think that both causes may sometimes co-operate, the first certainly affords the most rational explanation of the phenomena. The condition itself is of frequent occurrence in gastric fevers, and in many other diseases, but is no where so strikingly manifested as in the collapsed or blue stage of cholera. Here we almost constantly find, that although the skin is as cold as marble, it is so exquisitely susceptible, that the slightest impressions are painful, and those which are intense cannot be borne. A fly lighting on the skin under such circumstances distresses the individual, although apparently lifeless, and sinapisms frequently act so violently as to extinguish the remaining vitalism of the system. We may offer in explanation of this condition, the reasoning presented by Giannini. It is founded upon the antagonism manifested in the vital acts of the several

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tissues, on account of which, when their healthy equilibrium is destroyed, they may be under different degrees of excitement. Thus, taking the nerves and arteries as an example: under ordinary circumstances, an irritation or exalted action of the former will extend its influence to the latter, and produce in them a similar state. But sometimes the reverse holds good. We know that in many conditions of the system, in consequence of the operation of the law of revulsion, a state of super-excitement of one tissue or organ abstracts directly from another, and leaves it in a negative state of stimulation. This perhaps is what occurs in the state we are now considering. The nerves are thrown into an exalted state of erethism, and concentrating upon themselves that excitement which belongs to the capillaries in their healthy state, thus leave them in a negative state of stimulation. This giving rise to a suspension of capillary circulation, of irritation, of absorption, of secretion, &c., necessarily occasions a suspension of calorification, and the surface of the body consequently becomes cold, and the watery parts of the blood drain away in form of profuse exhalations. Nor does this seem to be mere hypothesis. It is corroborated by results of treatment employed in this form of disease. We have already seen that in the treatment of fever, Avicenna bathed the surface of the body with cold water, and we are told that he even adopted this practice successfully where the skin was covered with cold clammy sweats, which were arrested by it. We have also adduced the testimony of Hahn upon this point, who, while himself covered with cold sweats, and while the surface of his body was as cold as though he had been immersed in melted ice, experienced the most essential benefits from the incessant cold ablutions performed by his wife. Samoilowitz, likewise, obtained excellent effects from frictions with lumps of ice, in the treatment of the plague of Moscow, even when the surface of the body was quite cold; and it is well known, that within a few years this practice has been carried to a great extent in the treatment of cholera, and if we are to believe the reports of those who have pursued it, with signal benefit. The effect of the cold under such circumstances, would seem to consist in the reduction of the excessive erethism of the nerves, thereby bringing about a restoration of the natural equilibrium between them and the vascular capillaries.

But we adduce these facts, more with a view of explaining the *modus agendi* of cold, than with the intention of recommending its application under such circumstances. We will

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not take upon ourselves to affirm that it may not be usefully employed, even when the surface of the body presents a temperature much below its natural standard; but as it will always be difficult to distinguish the cases in which it will be beneficial under such a condition, and as an improper application of it would be fraught with danger, we think the dictates of prudence should generally forbid us from resorting to it, except where there are more unequivocal evidences of excessive stimulation or excitement of the tissues, furnished by a partial or general elevation of animal temperature, or other phenomena of the disease, upon which reliance can be placed.

Restricted to these cases, cold constitutes one of the most salutary agents that can be employed, in combatting the forms of disease now under consideration. But to obtain its good effects, its mode of application must be varied, according to the phenomena of the case, the period of the disease, the strength of the patient, and other circumstances.

In the early stage of the disease, when the case is marked by violent excitement generally diffused—when the skin is hot, dry and pungent; the thirst urgent; the respiration laborious; the restlessness and jactitation incessant,—when the heart labors violently and the arteries throb,—if the patient be young and vigorous, we prefer the administration of cold by affusion, when the circumstances of the individual are such as to enable us to resort to it. We generally have him stripped and supported in a chair in a common bathing tub, or any other convenient vessel, and dash buckets of cold water upon him from a height, until the pulse is reduced to a mere flutter. We then have him rapidly wiped with dry towels, and put to bed as speedily as possible, between blankets. In many cases, after the lapse of ten or fifteen minutes, a free and genial perspiration will break forth from the whole surface of the body, all the distressing symptoms will be dissipated, and the disease will form a crisis. Sometimes, however, the relief will only be temporary, and it will be necessary to repeat the affusions as soon as the excitement shall again become intense. This method of applying cold is more particularly applicable to the violent exacerbations which take place in that form of disease which has been denominated bilious remittent fever, and employed in such cases, we have repeatedly seen it, both in private and hospital practice, produce effects almost miraculous. During the last autumn, several violent cases of fever were admitted into the Baltimore Infirmary, from Savannah, some of which were treated mainly by cold affusions. Two

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individuals, whose sufferings from febrile excitement were extreme, were submitted to this practice, and in less than an hour, a crisis was established in each case. One convalesced rapidly without any other treatment than occasional aperients and absolute diet; and the other improved progressively for eight or nine days, but at the end of that time relapsed from some cause, and finally died of cephalic complication.

But while we thus commend this method of applying cold, it should be remarked, that it should be restricted to the class of cases which have been designated. When the patient has been either debilitated by his present disease, or by previous bad health: when the excitement is less urgent, or is unequally diffused—when the fever has existed for some time, and when there is a proclivity to pulmonary affections, &c. the cold effusions must not be employed. Neither will they be admissible in the cases of delicate females. But even these circumstances do not deprive us of the advantages of cold. They only render it necessary that we should be less bold in our mode of administering it.

Under these conditions, it will be necessary to confine ourselves to cold ablutions, cold sponging, or to the application of ice, cold water, &c. to those parts which present the greatest evidences of excitement, while warmth is applied to those in which it is deficient. When the heat, though moderate, is nearly equally diffused, cold ablutions and cold sponging should be sedulously employed. To produce their full effect they should be repeated from time to time, and should be continued as long as the condition of the patient which demands them may continue. A few repetitions are not sufficient. The excitement has a constant tendency to recur after it has been partially subdued, and to ensure the accomplishment of the end proposed, this tendency must be unremittingly met by a repetition of the remedy. Cold water alone may be employed, or it may be mixed with vinegar, a small quantity of alcohol, or common whiskey. The addition of these latter articles increases the evaporation from the skin, and thus augments the degrees of cold.

When the excitement is unequally diffused, and there is an augmented temperature at some points, and a diminution of it elsewhere, cold should be applied to the former, while the latter should be enveloped in warm fomentations, should be submitted to stimulating frictions, or even be covered with sinapisms or blisters. This rule of practice is of the greatest importance, and should never be neglected. The cold may be

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applied in either of the ways already recommended, or pounded ice confined in a bladder may be laid upon the part.

Besides the application of cold, there are various other means which are sometimes prescribed, under the name of refrigerants, cooling medicines, fever powders, fever mixtures, &c. many of which are at least of questionable propriety, and the efficacy of some of them may be doubted. They consist for the most part of articles of the saline character, some of which are neutral, while others possess either a redundance of acid or alkali.

Of the first class, the nitrate of potash seems to be most extensively employed, and in combination with tartarized antimony, and sometimes with small portions of calomel, it is perhaps more frequently prescribed in our country, than any of the class of remedies under consideration. That it may be sometimes useful in the treatment of febrile diseases we can readily conceive, but that it is far more frequently productive of mischievous consequences we are likewise convinced from reiterated observation. Its irritating properties are notorious, and it is well known, that taken even in moderate quantities, it frequently excites violent inflammation of the mucous membranes of the stomach and intestines—and in a number of instances, rapid disorganization. In febrile affections with a predominance of gastro-intestinal symptoms, we have, therefore, long since ceased to prescribe it, and seldom resort to its administration, except in those acute inflammatory affections in which the gastro-intestinal mucous membrane is but slightly implicated, and as a diuretic in hydropic affections.

After sufficient depletion, and simultaneously with the employment of other anti-phlogistics, we frequently administer small and repeated doses of some of the milder salines, as the tartrates and citrates of potash or soda, and we have often found that they tend to allay thirst, soothe irritation, and promote a gentle exhalation from the skin, thus abating the inordinate heat of the surface, and rendering the patient more comfortable. With this view, we commonly administer the common neutral mixture, a simple solution of the citrated kali with the addition of a small quantity of lemon syrup, or a solution of the neutral tartrate of potash or common soluble tartar; and when there is much irritation of the mucous membrane, with a disposition to watery evacuations of the bowels, we have generally added a small excess of alkali. These articles we generally administer in small doses, and repeat them frequently. In some instances, when the irritation

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of the mucous surfaces has not been considerable, we have added very minute quantities of tartarized antimony.

But all such remedies can at best be merely regarded as adjuvants of no great power, and the practitioner will frequently have occasion to observe, that after he has properly instituted his other and more efficient antiphlogistics, it will be better for him to suffer the stomach to repose in quietude, than to be constantly harassing it with medicines.

e. Revulsives.—No class of remedies is capable of accomplishing more in the treatment of febrile follicular gastro-enteritis, than revulsives, when properly timed, and duly adapted to the state of the disease. Those which are most commonly employed, are sinapisms and epispastics, but various others, as the application of cups, of which we have already spoken, moist or dry heat, rubefacients, frictions, pediluvii, &c. all of which act in a similar manner, and merely differ in intensity.

From what has been remarked in the course of the preceding observations, it must be apparent, that revulsives should never be employed until the excitement of the system has been sufficiently subdued by blood-letting, and other antiphlogistics; for if resorted to before that time, they cannot effect revulsion, but the additional irritation excited by them will become concentrated upon that already existing at the fountain of the disease, and exasperate all the symptoms. Their efficacy depends upon their faculty of exciting a new impression of greater intensity than that in which the disease consists, and, consequently, of transferring irritation and circulation from the seat of the primary affection to that to which our remedy has been applied. To enable this transfer to take place, the intensity of the primary irritation must be sufficiently reduced to bring it within the reach of the one to be developed by the revulsive agent, else the disease will still maintain the predominance, and will continue an uninterrupted course.

In the early stage of the disease we have already spoken of warm pediluvii, rendered still more exciting by the addition of salt or mustard. They constitute throughout the whole course of the malady a valuable means of creating revulsion from the head and the abdominal organs, especially if at the time they are employed, cold be applied to those regions, either by sponging, ablutions or otherwise. They will be still more valuable in those cases which are characterized by strong cephalic determinations, and should not be omitted whenever the condition of the patient is such as to enable us to employ them. Hot cata-

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plasms and fomentations act in a similar manner, and may be employed under the same circumstances. They may be applied either to the extremities or directly over the abdomen. Applied to the latter point, we have derived great benefit from hot cataplasms, and in children especially we seldom omit to employ them. Sometimes to render the revulsive impression more effectual, we add about one-fifth or one-seventh of mustard flower to the other ingredients of the poultice.

When irritation and excitement have been sufficiently reduced, or when, to use the language of Rush, the system has been reduced to the *blistering point*, sinapisms and blisters should be employed. The points to which they are to be applied must be determined by the circumstances of the case. As a general rule, they are most beneficial when applied to the extremities, and our common practice is, to put them alternately upon the soles of the feet, the calves of the legs, and the inner part of the thighs. In the latter situation, they have appeared to produce the most perfect revulsive impression. They may also be applied to the corresponding parts of the arms, and in many cases they must likewise be placed upon the abdomen. Of their application to the head we shall have occasion to speak under the next division of our subject. The employment of sinapisms must be directed by the same principles, and they, as well as blisters, may be applied to any one of the points enumerated. It should be borne in mind, however, that we do not employ blisters for their evacuant, but for their revulsive effect; consequently it will not be necessary to apply them in the immediate vicinity of the seat of the disease, as they will produce all their good effects when placed upon some remote point. Indeed, it will be frequently observed, that blisters will produce more benefit, in the advanced stage of the disease, when applied to the extremities, than directly to the walls of the abdomen; and the same thing is observed in diarrhœa and dysentery. Applied directly to the walls of the abdomen, they sometimes prove highly prejudicial, while their influence exercised upon the extremities, under the same circumstances, produces happy results. Andral has made the important remark, in relation to this point, that when the blistered surface of the abdomen assumes a gangrenous condition, he has almost constantly discovered, after death, a corresponding condition of the mucous membrane of the intestines. This coincidence should lead us to consider well our indication before we apply blisters to that region, especially in the advanced stage of the disease, and to pre-

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fer the extremities, except where circumstances of an urgent character exist to call for the application of the blisters to the abdomen.

Revulsives, though valuable in all forms of the disease, are doubly so where evidences of unequal determination exist, as manifested by cold extremities, great oppression of some of the internal organs, local pain, and a general restlessness or *malaise* of the patient. Under these latter circumstances, we have seen a few sinapisms act like an anodyne, in soothing the distress of the patient, who, from having been previously in a state of incessant jactitation, has fallen into tranquil slumbers under their influence.

In the advanced or typhoid stage of the disease, many physicians prescribe blisters and sinapisms with the avowed object of stimulating the system, and sustaining what they conceive to be the enfeebled powers of the organization. The inflammation of the dermoid structures, produced by these agents, certainly does occasion more or less excitement of the circulation, and of the nervous system, but their efficacy does not depend upon this influence. It is altogether, or at least in a very great degree, attributable to revulsions, as already explained, and the reason why the patient is invigorated by them, is, that by the development of these revulsive impressions the local determinations are broken up, the irritation, and with it the circulating fluids are more equally distributed, the diseased organs are relieved of their sufferings, and partially restored to that condition which enables them to resume their functional acts, the apparent or deceptive debility of the patient disappears, and he becomes stronger, and feels himself relieved.

f. Tonics and excitants.—We shall say but a few words upon this class of remedies. They are sometimes called for, where the vitalism of the organization has become so much impaired by the aggressions made upon it by the disease, as to render the organs incapable of executing those functions essential to life; and under such circumstances, it sometimes becomes necessary to administer them even at the expense and hazard of exasperating local inflammation. The cases, however, in which this practice is necessary, are comparatively rare, and are, in many instances, the result of a neglect of depletion in the early stage of the disease. If, therefore, antiphlogistics be pushed to a sufficient extent at the commencement, we shall not have this difficulty to contend with towards the conclusion, and should it unfortunately occur, stimulants and tonics furnish but little chance

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of success. We think we have given them a fair trial. At one period, haunted by the fears of debility and typhus, we resorted to them freely, and administered them extensively, but instead of having our hopes realized in the improvement of the patient, we too often had occasion to see the symptoms of debility, as we supposed them to be, increased, and the typhoid condition become every hour more formidable. Sometimes, indeed, the remedies seemed to assist in bringing about a favorable termination, but this success was but rarely obtained. Subsequent experience has enabled us to make a more correct interpretation of this state of imaginary debility—has taught us that it is merely the consequence of the sufferings of organs essential to life, and that if these sufferings be relieved by a properly directed antiphlogistic treatment, the debility and typhus disappear, and the disease reaches a favorable termination, without the aid of any other stimulation than that which is produced by an improvement in the diet of the patient, in proportion as convalescence advances. These circumstances have induced us to abandon stimulants and tonics almost entirely in the treatment of gastric fevers of the continuous type, and to restrict their employment, in a great degree, to intermittents. The results of general experience are, indeed, unfavorable to the employment of stimulants and tonics, except under the circumstances already designated. In former times, when cinchona was regarded as a specific against fever, we cannot wonder that physicians employed it, and commended its efficacy. But now, that repeated and extensive observation has demonstrated that it possesses no such specific powers, physicians are better prepared to appreciate its merits, and their experience is decidedly unfavorable to it, as well as other stimulants, except in intermittent fevers. Andral, whose observations apply exclusively to the typhoid forms of fever, and that too in subjects who had been enfeebled by poverty and dissolute habits, assures us, that out of forty individuals treated by cinchona in its various forms, wine, camphor, musk, assafœtida, acetate of ammonia, ether, aromatic distilled waters, &c. twenty-six experienced a manifest aggravation, and terminated fatally; eleven experienced an amelioration while the remedies were employed, and only three became better so soon after their administration, as to seem to justify a reference of the improvement to the influence of the remedies.

Sec. 3. *Treatment of the Nervous Stage.*—The nervous system, together with its investing membranes, becomes implicated at very different periods of the disease; but in some instances

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they are so slightly affected, as to manifest but little disturbance. At first, the nerves themselves, and the cerebro-spinal axis, merely participate in the general erethism which is developed by the radiation of the irritation from the gastro-intestinal mucous membrane. But as the disease advances, these parts become more profoundly involved, and it is generally observed, that about the seventh day, sometimes earlier, but frequently after this period, the mind becomes more impaired, delirium, if it has not existed from the first, becomes established; the countenance of the patient presents a kind of fatuitous expression; twitching of the muscles takes place; the tongue becomes dry and dark colored; and in short, a state of adynamia is brought about, by the intensity and continuance of the lesion of the mucous membranes, and its influence having become localized on the brain, spinal marrow, or their coverings. This affection, though secondary, may become predominant, the primary disease of the mucous membrane being suspended or extinguished by the intense implication of the cerebro-spinal axis.

The treatment of this stage of the disease exacts much skill and great powers of discrimination. While the meningo-cephalic symptoms continue to be merely sympathetic of gastro-intestinal irritation, and of the state of super-stimulation of the blood vessels induced by it, they may be generally subdued by the treatment already directed, and will subside in proportion as the primary irritation is overcome. Should the evidences of cerebral determination be considerable, at the commencement, it will merely be necessary to meet it by general and local blood-letting, while we at the same time direct our treatment to the condition of the digestive organs. If the general bleeding should not suffice, leeches and cups must be applied to the temples, behind the ears, or to the nape of the neck, and cold must be applied to the head, and warmth to the extremities or more powerful revellants should be applied to the latter region.

But when the meningo-cephalic symptoms have become dominant—when a well defined arachnitis or cephalitis become engrafted upon the disease, and we have the whole aspect of the case changed by the development of those symptoms which have been supposed to constitute a complete state of adynamia, what course should be pursued? The semblance of debility is strong, yet we have shewn that it is deceptive. The powers of life seem to be exhausted, but this is merely owing to the profound embarrassment and implication of important organs. Remove that implication, and the vital energies will recoil—they

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will again respond to the proper demands made upon them, and the crippled functions will be restored to activity. This being the case, stimulation is clearly not indicated, and although very generally resorted to under such circumstances, the result is such as ought to convince every intelligent practitioner that it is incompatible with the condition of the organism which he wishes to remove. Neither can an opposite course be pursued with much energy at this juncture, because such aggressions have been committed upon the vital energies, that were we to resort to active depletion, their recuperative powers would be reduced too low, and we should hasten the fatal termination of the disease. Nevertheless, it will still be possible for us to do much. Although the patient be reduced low, he will still be capable, in many cases, of sustaining the loss of a small quantity of blood by cups and leeches applied to the temples and back part of the head and neck, and it is truly astonishing what strikingly beneficial results will often be produced in this adynamic state by the drawing of even a single cup, or of only two, three, or half a dozen leeches. When with this condition of the cephalic organs, there is epigastric tenderness, with a tendency to a tympanitic condition of the abdomen, we also continue to apply two or three cups, from time to time, or a few leeches to that region. But it should be borne in mind, that these are not states for active depletion, our policy under such circumstances is not to advance *cite*, but *tute*. Our means must be accommodated to the crippled energies of the system, always taking care to husband its resources, while we endeavor to arrest the ravages which are making upon its organs.

When, therefore, we have instituted the local abstraction of blood to as great an extent as circumstances will admit, the rest must be trusted to revulsives, to the local application of cold over the excited organs, and *expectation*. Revulsives especially will be invaluable under these circumstances, and our main reliance must be placed upon them. Blisters must be applied alternately to the extremities and to the nape of the neck, as already directed, always taking care not to apply too many at the same time. We have seen a single small blister applied to the inner part of each thigh, or one to the nape of the neck, produce more perfect revulsion than a dozen large ones laid upon different parts of the body. The best plan will be to shift them from place to place, and to endeavor to keep up a continuous revul-

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sive action, by repeating the blister at some other point before the impression previously made has had time to subside.

But in commending blisters thus highly, it is proper to remark, that there are states of the disease in which they are inadmissable. We allude particularly to that condition in which there is a general gangrenous tendency manifested in both the solids and fluids. Applied under these circumstances, the inflammation excited by them runs directly into gangrene, especially in young children, and the remedy hastens, rather than retards the fatal termination. It is in this condition of the system that the coincidence remarked by Andral, between the gangrene of the blistered surface, and that of the mucous membrane, is apt to be observed.

We have remarked in our account of the pathology of follicular gastro-enteritis, that the dryness and scabrous condition of the tongue does not always depend upon the state of the stomach and intestines. Careful and numerous investigations, subsequently made in the Baltimore Infirmary, have convinced us that these and other conditions of that organ, remarked in the course of the disease, bear a direct relationship with the disturbance of the process of innervation. There is frequently a perfect coincidence between the appearance of these conditions and the declaration of the nervous stage, and in proportion as the intensity of the phenomena which constitute this stage becomes increased, there is an augmentation of the dry and scabrous state of the tongue, and vice versa; that organ becomes moist and expanded in a ratio with the reduction of this intensity. We have so repeatedly seen this amelioration in the condition of the tongue produced by the application of a blister to the nape of the neck, to the thighs or other points, and by the operation of other revulsive agents capable of diverting irritation from the brain, that when we have directed such applications to be made, we have often predicted with absolute certainty what would be the effect produced. We have likewise witnessed a complete alternation between the influence of the revulsion, and the tendency to dryness of the tongue; that organ remaining moist while the revulsion maintained the ascendency over the affection of the encephalic organs, becoming dry when the latter has triumphed, and again resuming its moist condition when a new blister has been applied.

The explanation of the fact which we would offer is, that in proportion as the nervous centres and the ganglionic system become involved in the disease, they are rendered incapable of

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maintaining those acts in the capillary circulation which are directly concerned in the processes of nutrition and secretion; so that by this perversion or lesion of their functions, there is not only developed a corresponding perversion of the organic molecules, and of the secretions formed from them, but likewise a deterioration of the properties of the blood from which they all derive their origin. There is, therefore, not only a derangement or entire suspension of the secretion of the mucous membrane which covers the tongue, but of the whole mucous surfaces, as well as of the glands. Hence the former is dry, and incrusted with a substance which adheres intimately to its surface, and which cannot be removed until secretion is established, or which peels off leaving the organ perfectly raw.

In other respects, the treatment of the nervous stage must be conducted upon the same general principles which have been already detailed; and the same observations which have been made in relation to stimulants and tonics, apply with all their force to this condition of the disease. It is the state in which these remedies are most frequently employed, and although they are occasionally absolutely necessary, they will generally disappoint expectation, and too often exasperate the condition which they are intended to remove.

Sec. 4. *Treatment of the convalescence.*—It is quite unnecessary that we should say much on this head. Yet it is a condition in which the greatest errors are committed. So soon as the disease is removed, the appetite generally becomes ravenous, and although the physician may interdict the use of irritating aliments, the calls of nature are generally so urgent, that the patient is apt to obey them even at the hazard of his own life. When the disease has given way, and the tongue cleans, a more generous diet may be allowed; but the patient should be brought to its use gradually and cautiously. None but the lightest farinaceous articles should be at first allowed; but if these are borne well, and the individual continue to improve, he may be allowed light broths, and finally a small quantity of solid animal food of easy digestion. But in protracted cases, or where there has been a state of adynamia,—where the disease has reached the pustular or ulcerative condition of the mucous membrane, the greatest caution should be observed in the allowance of food. The intestinal ulcers have not yet healed, although the febrile symptoms have subsided, and if improper food be allowed, either the fever will be re-developed or a formidable diarrhæa will be induced. In many cases, indeed, under

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circumstances such as these, the slightest imprudence in diet will bring on a relapse, attended with a tympanitic condition of the abdomen, which will terminate fatally in the space of a few hours. It is on account of the changes of structure which have taken place in protracted cases of typhus, or other forms of fever running into that state, that persons convalescing from that disease are more prone to relapse than those who are recovering from a fever of shorter duration. Hence the greater caution in allowing food is necessary under such circumstances, and the greater the firmness demanded on the part of the patient to resist the cravings of his appetite, and on the part of the attendant to enforce a rigid dietetic discipline.

We shall here end our remarks. We have professed to treat of the management of follicular gastro-enteritis; but as there is probably nothing peculiar or specific in that form of the disease, by which it can be distinguished from inflammation involving other parts of the mucous tissue, many of our remarks will apply as well to gastro-enteritis in general, as to the follicular form of the disease. Perhaps in some respects the treatment which we have laid down may be too active for the proper follicular form of enteritis, as it is generally attended with typhoid symptoms: but as we conceive these very symptoms are often the consequence of a neglect of prompt and efficient antiphlogistic treatment at the commencement of the disease, we have been the more anxious to insist upon this, in order that these formidable consequences may be averted by timely and proper attention. When once fairly developed, they are difficult of removal, and as the system in that state cannot bear active means, our principal reliance, under such circumstances, must be on very sparing depletion and revulsives. Upon two points, especially, it will be seen that our opinions and practice are at variance with the general sentiment in this country. Not a blind follower of the principles of the modern French school, we are fully sensible of the value of some of them; and while we are disposed to subscribe to some and to reject others, our object has been, by making a fair estimate of facts, to lay down such a course of practice as is reconcileable with the truths established by that school, and with those which experience has demonstrated in our own country and elsewhere. The two points to which we have reference are, the administration of emetics and cathartics. In America and in England, we think they are carried to an extent which is not warranted by correct pathological views, and which is often highly detrimental. In France,

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we know that they are often omitted where they would prove highly beneficial, and that the general prejudice which exists against them in that country, has contributed, in no slight degree, to detract from the successful treatment of disease. It will be seen, nevertheless, from the foregoing remarks, that although we admit the efficacy of these remedies, we are exceedingly cautious in the administration of them. We are aware that this may be alleged as a defect. We can only say, that we speak from experience, and that a wide extent of observation justifies us in the adoption of the opinions we have inculcated. Nor is this experience peculiar to ourselves. Others, enjoying extensive opportunities of observation, have been led to adopt similar views in the treatment of disease, especially in relation to the employment of emetics and cathartics; and a reference to their recorded experience will shew, that they have realized a degree of success well calculated to confirm them in the correctness of their opinions. Besides other sources, we can with confidence appeal upon this point, to the clinical reports of Professor Samuel Jackson, and to those of Dr. Edward Barton, now of New Orleans.* We were, not long since, informed by a distinguished physician of this country, who is attached to an extensive charitable institution, that a few years ago, when the hospital with which he is associated was completely crowded with fever cases of a typhoid character, he and his colleague lost almost every case which was treated in the usual manner by blood-letting and cathartics. Completely discouraged, he resolved to confide the issue of a very bad case which had been recently admitted, exclusively to small doses of the acetate of ammonia well diluted with water; under this treatment the case terminated favorably, and thus led him to an entire modification of his views. Since then, he has managed that form of disease almost exclusively by "occasional local depletion, as it may be indicated by local symptoms, the *expectant* method and alterative doses;" and under this plan he declares that he rarely sees it fatal.

There is one other point, to which it may be proper to advert. It has been currently asserted, by those who oppose the physiologico-pathological doctrines which have been established by the modern French school, that it leads to a weak and inefficient practice; that the extensive lesions of the mucous membranes which have been so much insisted on, take place in

* American Journal of Medical Sciences.

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consequence of the neglect of blood-letting, and withal, that the practice inculcated although it may be successful in France, is not adapted to the more violent diseases of this country.

It is not our object to defend French practice, and especially that of any individual or sect. But as these objections have been made mainly in reference to Broussais, and have been so often reiterated as to give them currency with those who are not familiar with his writings; and as we can shew that they are all unfounded, we may be excused for adverting to them, the more especially as if they were true, what we have written must to a certain extent be false.

In relation to the first point, we have only to say, that the practice pursued even by Broussais himself, instead of being feeble and negative, is rather open to a charge of an opposite character. Speaking in reference to the abstraction of blood, he observes, "if we are sure that the individual has not labored under a chronic disease previous to the development of the acute affection, blood-letting may be pursued even to the extinction of the inflammation. In these cases, I let blood to the amount of a pound or more; I apply forty, eighty, one hundred, or even two hundred leeches, and if the disease is not arrested, should the patient be young and rich in blood, and experience exacerbations, I bleed him again and again during these exacerbations."*

This will suffice as a reply to the two first points. As regards the third, we will merely observe, that a practice founded upon the same or analogous principles, and similar to that which has been inculcated, has been tested and found successful, on the banks of the Ganges and amidst the jungles of India; on the shores of the Mississippi and of the Savannah, and under every latitude of our wide extended country, the activity of the remedies being graduated by the force of the disease.

* Broussais Cours de Pathologie et Therapeutiques Generales, tome 2, p. 29.

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REVIEWS.

ART. VIII.—*A Treatise on the Diseases of the Eye.* By W. LAWRENCE, M.D. F.R.S. &c. &c.

THE present period would seem to be unpropitious to the immediate success of a work under the above title. Mr. M'Kenzie's elaborate treatise on the same subject is yet recent, and would appear to have supplied, for the present, the wants of the profession in relation to this subject. The reputation, however, of the distinguished author of the present work, is sufficient, even on this side of the Atlantic, to give immediate circulation to whatever bears his name. We are accustomed to regard Mr. Lawrence as the most able and learned of the British surgeons. His writings, therefore, have a prima facie value which will certainly cause them to be read; and if the author sustains his reputation, they will take precedence of others.

A systematic treatise like the one under consideration is not a proper subject for complete analysis. We design, therefore, to direct the attention of the reader to such topics as are most interesting to the general practitioner, and to such as appear to exhibit most satisfactorily any peculiar views of the author.

In his introductory remarks, Mr. Lawrence, with great propriety, as we think, objects to the separation of the ophthalmic branch from the rest of medicine and surgery. In England this had been done to too great an extent, so that the practice of this department was chiefly committed to oculists, and hence was neglected in the general surgical courses. The consequence was that surgeons ceased to be oculists, and oculists ceased to be scientific surgeons. But an oculist is certainly unqualified who is not well grounded in the principles of surgery. This evil has, in the opinion of our author, been obviated by that which at first view, might perhaps be expected to augment it—that is, the establishment of a distinct school for ophthalmic surgery, the officers of which are selected from those who have been regularly educated as physicians and surgeons, and are required to throw open this great field of observation to the profession, and especially to medical pupils. Thus does ophthalmic surgery become a regular part of a complete medical education.

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From the bibliographical notices also embraced in his introduction, we are pleased to learn that Mr. Lawrence has enriched his work with information, drawn from the recent and valuable works of German authors, especially the Handbuch of Professor A. Rosas, of Vienna, in 3 vols. 8vo. and the Lehre von den Augenkrankheiten of J. C. Juengken, in 1 vol. 8vo. of nearly one thousand closely printed pages.

Passing over the preliminary pages which our author has devoted to the anatomy and physiology of the eye, and its appendages, we call the attention of our readers to

CHAP. 1.—*Pathology of the Eye.*—It is easy to account for the multiplicity and complexity of the diseases of the eye, when we advert to the fact, that in the structure of this little organ, are found specimens of every elementary tissue in the body—mucous, fibrous, serous, nervous, &c. &c. each possessing its own peculiar vital and physical qualities and its peculiar pathological propensities. It is an organ also which is greatly exposed to the causes of disease.

It is especially necessary that we should here notice our author's views in relation to inflammation, since they exhibit some of the fundamental principles on which he builds his work. With other writers he objects to the definition which declares inflammation to consist in swelling, redness, heat and pain, since one or all of these traits may occasionally be absent. What is the alteration in the disordered vessels giving rise to the phenomena of inflammation? is a query which our author wisely does not attempt to solve. "The most general notion," he says, "that we can form of inflammation, is that of increased action in the capillary circulation, whether evidenced by increased size of vessels and redness, or by deposition of new matter and consequent visible changes, such as thickening or opacity, increased or altered secretions, and unnatural adhesions." But inflammation does not consist in increased action alone. There must be an alteration in the mode of action, but in what that alteration consists, we are unable to determine." This, it appears to us, is a manly and philosophical admission, such as is characteristic of distinguished minds, and it is to be regretted that it is not often made by men of less ability than Mr. Lawrence.

Inflammation is not one and the same process, under all circumstances. It differs in degree, (being acute or chronic,)—in its effects—and in the character of its action, being common or specific. It varies also in different textures, according to the peculiar character of those textures.

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CHAP. II—Is devoted to *Inflammation of the Globe,* and from this we merely cull the observation, that common inflammation, of which the author here treats, is to be distinguished from the specific, or the sympathetic inflammation, by the principal symptoms, (such as pain, redness, swelling, intubrance of light, &c.) being equally developed and corresponding in degree.

CHAP. III.—*Inflammation of the external proper Tunics.* The means given by Mr. Lawrence, by which to distinguish conjunctival inflammation from that of the sclerotica, are very satisfactory, and as they are associated with some interesting observations we give the paragraph.

"The external redness begins on the anterior part of the globe, immediately round the cornea, where it forms a red zone. If we examine the circumference of the globe, we shall find distended blood-vessels advancing from the posterior part upon the sclerotica, and branching out into numerous ramifications, which are at length lost in the red zone that surrounds the cornea. In inflammation of the conjunctiva the redness commences in the circumference, the anterior part being at first comparatively free, and the sclerotica retaining its natural white appearance. The character of the red tint differs remarkably in the two cases. The vessels distended in sclerotic inflammation are those seated immediately upon the sclerotic coat: they are therefore covered externally by the conjunctiva, and, being seen through that membrane, appear of a pink, or rose red, and sometimes almost of a violet hue, which forms a striking contrast to the bright searlet of the vessels distended in conjunctival inflammation. The redness of the inflamed sclerotica is a rose or pink tint, being seen through the conjunctiva, and such is the color of the red zone which surrounds the cornea in the early period of the affection. The redness is uniformly diffused through the sclerotic, as if it had been tinged by some coloring substance; thus we find that this membrane is copiously supplied with vessels, although they do not, in the natural state, circulate red blood. When the inflammation is considerable, a dense arrangement of vessels may be seen lying under the conjunctiva, and occupying the whole surface of the sclerotic coat; in short, the inflammatory affection seems to produce a kind of new vascular creation, enlarging, and thus rendering visible, a vascular plexus, of which we see nothing in the natural state of the part. In inflammation of the conjunctiva, the vessels are not only of a bright scarlet color, but lie nakedly on the surface of the membrane. When inflammation, without being very violent, is seated in the conjunctiva and sclerotica at the same time, we may observe the marked difference in situation and tint between the two orders of vessels. They also differ in their course, those of the sclerotica running in straight lines from behind forwards, while the vessels of the conjunctiva are irregular and tortuous."

It is often exceedingly desirable to be able to give a precise prognosis in all cases of inflammation. "Can sight be preserved?" is the constant inquiry of the patient. In those external inflammations, Mr. Lawrence remarks, that the danger is proportioned to the degree in which the cornea becomes involved. If the

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cornea becomes gray or white, or if matter be deposited in its texture, sight will be more or less impaired.

CHAP. IV. *Causes of Ophthalmic Inflammation.*—These are, first, exciting; second, predisposing. The former are sufficiently manifest; some interesting observations, however, are made by our author on the effects of intense light upon the eyes.

"In the affection of the eyes caused by exposure to the glare from snow, there is intolerance of light, with profuse lacrymation, and an uneasy sensation, as if a particle of sand were in the eye, which is aggravated as the disease advances, to the severe suffering which might be supposed to be produced if snuff were thrown into it. Violent spasm of the eye-lids occurs. The symptoms seldom go off in less than ten days, and often last four weeks. The Tartars protect themselves when they hunt or travel in the winter, by a contrivance analogous to our crape spectacles; that is, by a net-work of black horse-hair, made a little convex in front, so that it may not interfere with the motion of the lids. The *snow-eyes* of the Esquimaux, as they are called by travellers, are a kind of goggles, made of extremely light wood, resting by a bridge on the nose like spectacles. It is excavated on each side, so as to allow free motion of the lids. The excavations are stained black with soot. A long narrow slit is made in the wood opposite each eye, corresponding exactly to the fissure between the lids, when they are nearly closed in looking at an object under a strong light. Blumenbach, who has described and figured these Esquimaux spectacles, says, 'I was unfortunate enough lately, having been affected for several months with tonic spasm of the eye-lids, to have repeated occasion to make use of this excellent and simple contrivance. Whenever I wanted to examine anatomical preparations, or objects of natural history in a clear light, no other assistance answered my purpose so well as the snow-eyes of these rude people. It also serves for a telescope, as all the visitors of my museum who have tried it can testify; and we find that the Esquimaux use it for the purpose of discerning distant objects more distinctly, when they are not troubled by the reflected glare from the snow.' "*

Predisposing Causes.—Mr. L. doubts whether, as is generally believed, light eyes are more susceptible of disease than dark. Dr. Smith, an army surgeon, found that of one hundred and seventy-six diseased eyes, one hundred and sixteen were light, and sixty dark. But in two thousand one hundred and sixty-three sound eyes, there were fifteen hundred light.

Any unhealthy state of the constitution, whether congenital or subsequently induced, favors the occurrence of ophthalmic inflammation. It often arises in plethoric states of the system, and often in debilitated, for in neither are all the functions carried on in proper harmony.

CHAP. V.—*Treatment of Ophthalmic Inflammation.*—Inflammation is sometimes suffered to become extreme from the neglect of the exciting cause, which may be still operating. A mote in

* BLUMENBACH, *specimen historiæ naturalis, &c.* Goetting. 1816, 4to.

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the eye is exceedingly apt to lodge itself upon the concave inner surface of the upper eyelid, and adhering to this, it sweeps over the eyeball in the motions of the lid, and constantly scratches its surface. It is seen by seizing and drawing forward the eyelashes with the finger and thumb—pressing upon the convexity of the lid with a probe and thus everting the lid. Artisans are exposed to injury of the eye from minute particles of steel which fly from their tools. They are usually hot at the moment, and both burn and pierce the membrane of the eye, clinging to it and producing a slight eschar. Sometimes it is exceedingly difficult to remove them. A probe will often not move them. The best instrument is the couching needle, its point being insinuated beneath them.

Mr. Lawrence does not think that these particles penetrate the cornea by the direct force of motion, but that they adhere because they burn. This may be often true, but it surely is not universal. We had occasion, a few days since, to remove the minute point of a delicate pen-knife from the eye of a young lady. The instrument was broken by merely pressing the point upon some substance, so that it could not have been heated by friction. It adhered, however, with extreme pertinacity. We are persuaded that as the metal becomes oxidized in the eye, it acts chemically upon the membrane, and becomes in a degree incorporated with it. This appears to be established by the fact that, when the particle is removed, it leaves a brown stain upon the cornea.

Mr. L. does not speak of the use of the magnet in removing particles of steel. It will often succeed when the fragment of steel or iron is but slightly adherent.

In contending with ophthalmic inflammation, our author presents the common array of antiphlogistic remedies. Of the several modes of blood-letting he chiefly relies upon venesection, carried to syncope, for the purpose of subduing inflammatory action. Against the exclusive use of local bleeding he uses the common argument. "You can take blood out of a part, but a fresh supply is still poured in." He does not object, however, to the simultaneous use of leeches, and advises that they should be applied as near to the diseased organ as possible—to the eyelids, and speaks rather contemptuously of the proposal made by some, to apply leeches to some remote part, with a view to the reproduction of some hemorrhage supposed to have been suppressed. He says, "they recommend the application of leeches, to the labia pendendi, to the anus, and to the ala nasi, when the

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ophthalmia is supposed to arise from the suppression of menstruation, hemorrhoidal discharge, or epistaxis. This seems to to be a round-about way of getting at the inflamed part, and it is a kind of refinement which must have proceeded from learned heads. Common sense would never have suggested the application of leeches to the arms, or vulva, for curing an inflamed eye. I have, however, no experience of the practice. We are not a little surprised at these remarks, coming from one who must be so familiar, with the therapeutic principles of revultion. Mr. Lawrence, must very well know that the "round-about way of getting at the inflamed part" is nevertheless often the most *effectual way.* All revulsives, indeed, approach it by the "round-about way." Now we know that nature often seeks an outlet for irritation at certain points in preference to others. The premonitory symptoms of apoplexy are often relieved by a spontaneous flow of blood from the hemorrhoidal vessels. This has suggested the propriety of procuring this flow by artificial means, and, now, abundant experience has shown that the practice is attended with happy effects. Leeches not only take blood from a part, but they produce an afflux of blood to that part, and derive the fluids from the part primarily affected. We know that often, when leeches are applied directly to an inflamed part, they aggravate the state of disease by rendering the part still more the centre of fluxion.

Mr. Lawrence classes mercury among his antiphlogistic remedies. After blood-letting and cathartics, he employs it in doses of from two to five grains. He seems to place but little faith in the application of local remedies to the eye. Cold lotions he advises when they create no unpleasant sensation. Cold and warmth, however, must, to a certain extent, be used empyrically. Sometimes the former may, in the first instance, be productive of advantage, but subsequently may create a sense of chilliness, and an aching in the organ, and then the latter proves more grateful to the feelings of the patient, and more salutary in relation to the disease. Generally, cold is most proper when the inflammation is superficial, and warmth more grateful when it is deep-seated.

Chap. VI.—*On wounds of the Eye*, we shall omit to notice, and call the attention of our readers to the subject of

Chap. VII.—*Catarrhal Ophthalmia.*—The pathology of this forms of inflammation is sufficiently known. As the inflammation is confined to the conjunctiva—as it is not severe or distressing, mild remedies will generally be found sufficient. Vene-

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section is not generally necessary. The general remedies advised are, an emetic—a cathartic—a pediluvium and a full dose of Dover's powder at bed-time. It is well established, that in this form of inflammation, warm local applications are to be preferred—such as a fomentation of poppy heads. Melin, Ridgway, Mackenzie and Beer, have treated it with great success by the employment of the solution of the nitrate of silver.

CHAP. VIII—is devoted to a subject (purulent ophthalmia of infants) far too frequently neglected by the general practitioner in this country. Its importance is well set forth in the language of our author.

"This inflammation is one of considerable consequence, and the more so from its commencing in a way not calculated to excite the attention, or alarm the fears, of the mother or nurse. The child cannot express its sensations, and the concomitant swelling conceals the progress of disease, so that serious mischief is often done before we see the patient. In the first place the inflammation is not immediately noticed, and in the second, the measures employed are frequently insufficient to check its progress: hence it causes more blindness than any other inflammatory disorder that happens to the eye; and the number of children is very considerable, whose sight is partially or completely destroyed by it. They are frequently brought to us with staphyloma, opacities of the cornea, and prolapsus of the iris; or with the tunics collapsed, and the very form of the eye destroyed. The parents and attendants are apt to suppose, when this inflammation first appears, that it is merely a cold in the eye, which will go off; and the consequences just mentioned take place, in many cases, before they are aware of the danger, and before they resort to surgical assistance.

"The inflammation commonly comes on about three days after birth, but it may take place at a later period. In the first stage, it is confined to the mucous lining of the palpebræ. It is observed that the lids stick together a little when the child wakes from sleep; their edges are redder than natural,* and especially at the corners; the child experiences pain from the access of light, and therefore keeps the eye closed. If the lids are inverted, their linings are found red and villous, and a little white mucus is seen on the inside of the lower. The globe is in a natural state. This first stage of the complaint is the *blepharo-blennorrhœa* of the nosologists; that is, purulent inflammation of the palpebral conjunctiva.

"In the second stage, all the symptoms are increased; the inflammation extends from the conjunctiva of the lids to that covering the globe; the vascular congestion and redness are much augmented; the lids swell and become red, even externally; there is a copious secretion of purulent fluid from the inflamed membrane, which agglutinates the edges of the palpebræ, and then accumulates between the lids, or pours over the face, staining the cap and

* "Mons. Billard, in a note to his translation of my lectures, says, 'external redness of the eye-lids often occurs at the outset of the inflammation. I have seen in infants a transverse red line on the eye-lid before the puriform secretion began. From this redness, Mons. Baron has often prognosticated, at the Foundling Hospital, the approaching attack of ophthalmia.'—*Traité Pratique*, p. 160, note."

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linen. Exposure to light becomes very painful, and the child turns away its head and contracts its brow, keeping the eye constantly shut, even if the swelling of the lids should not close them. The case now becomes *opthalmo-blennorrhœa.*

"The inflammation, the redness, and the tumefaction of the conjunctiva, are carried to the highest pitch in the second stage of the complaint; the whole of the conjunctiva, lining both the palpebræ and globe, is swollen and of a uniform bright scarlet color. The surface at the same time assumes a villous character, resembling in the latter respect, and in its color, the appearance of the internal surface of the fœtal stomach, after a successful injection with size and vermillion. The close adhesion of the membrane to the tarsi, prevents the palpebral conjunctiva from swelling much; but the loose folds between the lid and the globe become greatly enlarged, forming red tumid rolls, finely granulated. These folds, pressed on by the orbicularis, evert the tarsi, causing ectropium of either or both lids. This eversion takes place when we attempt to examine the eye by separating the lids, or it will be produced even by crying. It is generally temporary, subsiding when the cause ceases to act; but it may be permanent.

"There is general, and often very considerable tumefaction of the lids from serous effusion into their cellular texture; they become red externally, and in cases of the severest inflammation, the upper lid presents a smooth convexity of bright red color. When thus swollen, the upper lid hangs completely over the lower. The redness and swelling are increased by crying, when the whole globe is pushed forwards.

"A profuse discharge takes place from the eye, and pours over the face of the child in crying, or when the lids are opened. The latter are agglutinated by the drying of the discharge, and then become distended with the puriform secretion, which issues in a stream on opening the eye. During the night the eye-lids become so firmly stuck together, that they must be carefully moistened and soaked with warm water, or milk and water, to open them. When they are separated, the eye is completely concealed by the discharge: we wipe it away with a soft rag, and there is still enough to cover the globe and hide the cornea; and ultimately we find the latter frequently covered by a kind of coagulated layer, which must be removed by syringing. The discharge may be whitish, like the pus secreted by a healthy ulcer, and it then is generally small in quantity. More commonly it is yellow in various tints, and more copious; it is straw or lemon-colored, or it stains linen yellow, like the yellowest gonorrhœal discharge. This yellow tint is very deep in unhealthy jaundiced children, sometimes being of a yellowish green. It may be thinner and of a reddish color; that is, ichorous or sanious. Sometimes there is an admixture of actual blood."

The frequent unhappy effects of this inflammation are either sloughing, ulceration, opacity, or adhesion.

Mr. Lawrence recommends that the examination of the eye should be made when the infant is sleeping—the lids being quickly opened, before the orbicular muscle is called into action. It is impossible to accomplish it when the child is resisting. Mr. Lawrence is persuaded, from the pretty uniform appearance of this form of ophthalmia on the third day after birth,

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that in a great proportion of cases it arises from the contact of the matter of gonorrhœa or lencorrhœa, but he admits that it may arise from the ordinary causes of disease.

In regard to prognosis, if the cornea has suffered no lesion, we may safely assure the parent that vision will be preserved under proper treatment. The violence of the disease is also generally proportioned to the quantity of discharge.

Treatment.—There is scarcely any disease of formidable character which is so much under the control of treatment. Mr. L. first applies a leech or two; anoints the margins of the lids with lard; washes them frequently with milk and water to favor the discharge, and then immediately resorts to astringents—*for in this form of ophthalmia they are more safe and efficacious than in any other.* A solution of alum, of the strength of from four to ten grains to the ounce, is to be injected between the lids, and applied externally with a soft cloth. Sulphate of copper and nitrate of silver are also efficacious. Mr. Mackenzie uses the corrosive sublimate. Mr. Guthrie uses the unguent of the nitrate of silver, applying it with a brush all over the inner surface of the eye-lids.

CHAP. IX—is occupied with the important subject of *Purulent Ophthalmia in the Adult.*

"When we consider its marked character and serious consequences, it seems strange that it should so long have escaped notice. Yet our knowledge of it is subsequent to that more extensive intercourse with Egypt which took place during the contest for its possession between France and this country. I know of no clear description of the complaint previous to this epocha. Scarpa does not mention it in his first edition, bearing date 1801, and has only a single paragraph on it, an additional one, in his last or 5th edition of 1818. Mr. Ware does not allude to it, until long after the publications by the English army surgeons, subsequently to the evacuation of Egypt by our troops. Richter, who seems to have observed diseases of the eye with the greatest attention, for a long series of years, and who has described them with great fidelity, has not noticed this affection, which is not mentioned by Beer, nor by others of the Vienna school. Beer has entirely passed it over in his first edition of 1793: in the second edition of 1812–1816, he only alludes to it in a paragraph, in which he mentions that he had been long anxious to procure accurate information on the subject, and that his wishes had at last been gratified by a work of Assalini, which had convinced him that the complaint was merely inflammation of the glands of the eye-lids, (*blephar-ophthalmitis glandulosa*, that is, catarrhal inflammation of the lids,) rendered violent by the peculiar local circumstances, and passing quickly, in consequence of the unsuitable treatment of the natives, and of the French and English army surgeons, into blepharo-blennorrhœa, and ophthalmo-blennorrhœa.

"The following circumstances will sufficiently prove the importance of the subject.

"Assalina states, that two-thirds of the French army were affected with the complaint at one time.

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"Dr. Vetch informs us, in his interesting *Account of the ophthalmia, which has appeared in England since the return of the British army from Egypt*, that 'the total strength of the second battalion of the 52nd was somewhat above seven hundred men: six hundred and thirty-six cases of ophthalmia, including relapses, were admitted into the hospital, from August 1805, when the disease commenced, till the same month in 1806; of these fifty were dismissed with the loss of both eyes, and forty with that of one.'

"The ophthalmia depôt, under the care of this able physician, contained in the summer of 1808, upwards of nine hundred cases from more than forty different corps.

"Cases of purulent ophthalmia had occurred in the 1st battalion of the 52nd, when it went to Sicily in 1806. It continued to suffer there. A part of the army of Sicily, which had been detached to Egypt, brought back with it fresh infection. From this station more than one hundred and thirty cases were sent home totally blind.

" 'It appears from the returns of Chelsea and Kilmainham hospitals, that 2,317 soldiers were, on the 1st of December, 1810, a burthen upon the public from blindness in consequence of ophthalmia. Those soldiers, who have lost the sight of one eye, are not included in the number above stated.'

"In 1804, within nine months from April to December inclusive, nearly four hundred cases of purulent ophthalmia occurred at the Royal Military Asylum; and from that time to the end of 1810, upwards of nine hundred additional cases had taken place in the same establishment, without including relapses.

"Some years ago this alarming complaint broke out in a large boy's school in Yorkshire. Blindness of one or both eyes, or serious injury to sight, from corneal opacities or other causes, took place in nearly twenty instances. We cannot suppose that the proportion of unfavorable results would have been so considerable, if proper treatment had been adopted; for, in the Military Asylum, where the cases were so numerous, only six lost the sight of both eyes, and twelve the sight of one eye."

It is not necessary that we should dwell upon the symptoms of this variety of inflammation. With regard to the causes, Mr. Lawrence, after relating many cogent facts, comes to the conclusion that the disease is often communicated by contagion.

Treatment of acute purulent ophthalmia.—The object, in the onset of the disease, is to correct the inflammation of the conjunctiva before it is imparted to the cornea. To accomplish this, blood *must* be taken *copiously* and *at once*, so as to produce a decided impression. The pain must be subdued by this, and the turgescence visibly reduced. After venesection, cupping from the temple and leeching follow. Mr. L. objects to scarification of the vessels in any form of acute ophthalmia. Walther recommends to excise a large piece of the swollen conjunctiva. As a local application for the purpose of subduing morbid heat, cold spring water, applied by cloths, is the most salutary. The cold douche has been practised with the most decided benefit. Warm applications are generally bad. As-

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tringents are to be employed as soon as the active inflammation has been subdued. Mr. Briggs recommends highly the oleum terebinthinæ for the purpose of restraining the discharge. It is applied with a camel's-hair pencil.

Chap. X—is devoted to *Gonorrhœal Ophthalmia.* The symptoms of the acute form of this affection are given by Mr. Lawrence in a very graphic manner.

"*Symptoms and progress of acute gonorrhœal ophthalmia.*—This affection presents all the characters of purulent ophthalmia in their fullest development. There is the greatest degree of vascular congestion, the most intense and general external redness; excessive tumefaction of the conjunctiva; great chemosis, with corresponding swelling of the palpebræ; and profuse yellow discharge. In the first stage of the disease, which is short, the inflammation is confined to the conjunctiva, and is attended with soreness and stiffness, with the sensation of sand or dirt in the eye, and with more or less uneasiness on exposure to light or using the organ. The affection soon extends to the cornea, with severe and agonizing pain in the globe, orbit, or head, augmented to intolerable suffering on exposure to light, and with febrile disturbance of the system of inflammatory character. The danger to the organ is now most serious and imminent: indeed, when the disease has thus advanced from the mucous membrane to the globe itself, we can hardly expect by any kind of treatment to avert entirely its destructive consequences. The violent inflammation, which causes the yellow puriform discharge from the mucous surface of the conjunctiva, produces effusion into the cellular texture connecting it to the surrounding parts. Hence the general swelling of the membrane, and that more considerable tumefaction on the front of the sclerotica, round the cornea, which is called chemosis. The latter is often so considerable that the swelled conjunctiva overlaps the cornea all round, so as nearly to hide it. Similar effusion takes place into the cellular texture of the eye-lids, enlarging them considerably, more particularly the upper, which hangs over, and sometimes completely covers the lower. This palpebral swelling is sometimes œdematous, with the integuments but little redder than natural; in other instances it is firmer, with the skin, particularly of the upper eye-lid, bright red. The latter state denotes more active inflammation, and greater danger to the organ. The chemosis, and the swelling of the lids, make it often difficult, and sometimes impossible to get a clear view of the cornea. Although it is desirable to do this, in reference to prognosis, when we first see the case, we should not persist in our efforts at the risk of augmenting the inflammation, or the patient's sufferings. The œdema of the eye-lids declines in the progress of the affection, and then one or both of them may become everted, the convex edge of the tarsal cartilage being pushed forwards by the swollen conjunctiva.

"The chemosis and the tumefaction of the eye-lids are analogous in their nature and mode of production to that swelling which takes place in the neighborhood of any active inflammation. That the former should have been referred heretofore to the deposition of venereal matter in the cells of the part, and that incisions should have been recommended for its evacuation, will not surprise us; but we could hardly have expected to find such a mode of accounting for the phenomenon adopted by Beer and Richter. The swelling of chemosis, according to the former, arises from the effusion of gonorrhœal matter

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under the conjunctiva: he mentions the practice of making incisions for the discharge of this matter, and represents that from such incisions there flows out a purulent fluid, or a yellowish acrimonious ichor. He says that gonorrhœal matter is sometimes seen at the very beginning in the chambers. 'Sometimes,' says Richter, 'the conjunctiva swells up round the cornea, as in chemosis: this swelling depends entirely on an effusion of true gonorrhœal matter into the cellular texture and the conjunctiva, and the matter flows out on making incisions through that membrane. Sometimes gonorrhœal matter is found in the anterior chamber.'

"The inflamed membrane exhales at first a thin whitish mucus in small quantity; as the inflammation proceeds to its full development, the discharge becomes thicker, yellow, and abundant; the yellow tint and the quantity of the exhalation being in proportion to the violence of the inflammation. When the latter is at its height, the discharge closely resembles in its appearance, and in the stain communicated to linen, that which proceeds from the urethra in venereal gonorrhœa.

"Although the pain is generally most severe, both in the eye and in the head, as in other instances where the dense and unyielding texture of the cornea is the seat of inflammation, and although patients often complain of burning pain, of tension as if the eye would burst, of deep-seated and intense agony, with extension of these distressing and almost intolerable sensations to the brow, forehead, and head generally, there are some instances in which little or no pain is experienced."

This disease is to be distinguished from the purulent ophthalmia, by the fact that the former begins in the conjunctiva oculi, and is violent from the first, while the latter begins usually in the palpebral conjunctiva, and is less sudden in its attack. Gonorrheal ophthalmia usually attacks but one eye, the other both. This disease is most violent and intractable. Mr. Lawrence relates fourteen cases of which nine terminated in loss of vision.

Treatment.—Mr. Lawrence speaks of remedies with but little confidence. The antiphlogistic plan he approves of, but admits its frequent inefficacy. He alludes to the advice of some practitioners to suppress the discharge at once, by the employment of a ten grain solution of the nitrate of silver, or other strong astringents. He thinks the trial of such remedies justifiable, because of the insufficiency of other remedies. Mercury is of no value, nor is confidence to be placed in the means advised by Beer and Scarpa, for re-producing any suppressed discharge from the urethra. The ordinary local applications are only to be considered as means of lessening suffering.

Chap. XI.—*Rheumatic Ophthalmia.* As there exists in the structure of the eye that tissue which is the seat of rheumatism, we must expect occasionally to encounter in this organ *rheumatic inflammation.* This term is particularly applied to inflam-

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mation of the sclerotica caused by cold. The symptoms are comparatively mild; there is dullness of cornea, and slight indistinctness of vision; it may be imparted to the iris, but the conjunctiva rarely participates. There exists dull aching pain, with sense of tightness especially around the eye. Light is not particularly annoying. There is some constitutional disturbance.

The treatment applicable consists in general bleeding, cupping, leeching, *warm* applications, alterative cathartics, pediluvia, diaphoretics. Calomel and opium in small and frequently repeated doses are eminently serviceable, especially when an extension of the disease to the iris is feared. The wine of Colchicum is also recommended.

CHAP. XII.—*Scrofulous Ophthalmia*, is a subject of great interest to all practitioners.

"*Symptoms and course.*—The external redness, which is often inconsiderable, and sometimes more apparent in the lining of the lids than in the eye, is partial in the latter situation. Particular vessels, or fasciculi of vessels, are distended on the surface of the membrane, run towards the cornea, and extend over its margin, or stop short at the boundary between it and the sclerotica. Where these fasciculi terminate, we observe the small elevations, called pustules or phlyctenæ. These, which may have a whitish appearance, or contain a little clear or yellowish fluid, may be single, or in greater number, situated on the cornea or sclerotica, or (which is most frequent) on the boundary between them. The occurrence of these elevations, which is characteristic, though not belonging exclusively to the present affection, has led MR. MACKENZIE to regard strumous ophthalmia as 'an eruptive disease, affecting the conjunctiva, not as a mucous membrane, but as a continuation of the skin over the eye.'

"The access of light to the eye is painful, and the uneasiness produced by this cause is carried to an extreme degree, so as to constitute a distinguishing symptom of the complaint. The lids are spasmodically closed, and a powerful contraction of the orbicularis palpebrarum offers an effectual obstacle to any attempt at opening them. If they are forced open, the cornea is turned up under the edge of the orbit, away from the light. The spasmodic action of the orbicularis, excited by exposure to light, causes actual pressure on the eye, and makes the child scream with pain. This action of the muscle makes the lids look as if they were swollen, but they are not so. The child makes every effort to protect the organ from the painful impression of light, contracts the brows, draws down, the skin of the forehead, elevates the lips and alæ of the nose, and in short puts into action all the muscles of the face to protect the suffering organ. Hence arises a peculiar and characteristic physiognomy of the disease, so that we can easily determine its nature on the first sight of the patient. The painful impression of light upon the organ in severe cases, is such that the child seeks the very darkest corner of the room, to escape from the light, and, if in bed, it will turn the face against the pillow, or hide it under the clothes to accomplish the same purpose. For the same reason, if brought into the light it presses the hand against the eyes and holds the head down; great irritation, redness, and eruption being often produced upon the

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forehead and nose by this cause. This position of the head produces determination of blood to the affected parts, aggravating the disease in the eye. The great sensibility of the retina (*photophobia scrofulosa*) is not the result of inflammation, nor is it in a direct proportion to the increased redness, being often excessive where the eye appears almost natural; indeed redness is not essential to the disease. It is a sympathetic or functional affection. In such cases as I am now describing there is no immediate disorder of the retina; the child will be able to open its eyes, and to see as well as if there was nothing the matter with them, towards dusk. It is a disordered sensibility of the retina, dependent on the state of the alimentary canal. This symptom need not excite any fear of injury to vision. If the inflammatory symptoms are active, with much external redness, there may be considerable pain; but under other circumstances the patients do not suffer much so long as light is excluded.

"There is a copious flow of tears when the affection begins; the external surface of the organ suffers great irritation, the lacrymal gland sympathises with that irritation, so that when we attempt to examine the eye, a quantity of clear hot fluid runs out from between the lids. When the eye is exposed to light, a copious discharge of hot scalding tears takes place; the passage of these into the nose excites sneezing, often for several times in succession. These irritating tears produce redness of the lids, and excoriate the palpebræ and face. They cause itching and soreness in the parts over which they flow, and aggravate the original complaint; the child rubs and scratches the lids and face, which become red, sore, and pimply. Small yellow pustules form on this inflamed skin, and produce a discharge which incrusts. The affection extends on the forehead, temples, and face, the pustules and incrustations increasing; in its worst form it is called *crusta lactea* or *porrigo larvallis*, from its coating the face like a mask. An eruption of this kind, commencing in the lids and spreading over the face and head, will sometimes extend over the body.

"The affection of the eyes is accompanied by a disorder of the stomach and bowels. There is costiveness, with white or furred tongue; often fetid breath, distended abdomen, morbid appetite, grinding of the teeth during sleep. The head is hot in the beginning; sometimes there is also heat of skin, especially at night, with restlessness; but, in the progress of the complaint, the surface becomes pallid, and feels dry and harsh.

"The edges of the lids are often red, swollen and painful. The mucous membrane of the nose is frequently affected; there is an acrid secretion with excoriation of the nostrils, with swelling and redness of the alæ nasi, and often of the upper lip. The ears are red and sore, and excoriated behind; and the absorbent glands of the neck are frequently swelled.

"The symptoms are worse during the day; there is a remission when the sun has descended below the horizon. Children, who have hid themselves in the dark all day, recover their activity at night and open their eyes without pain. Generally both eyes are affected, though not in an equal degree. The disease may begin in one, and pass to the other; or they may suffer alternately.

"The inflammation of the eye may suddenly get better, and will return as suddenly. They are often repeated attacks at longer or shorter intervals, and slight exciting causes will renew disorder where the disposition is strong. In this way the affection lasts for months and years, and it is difficult to say when the patient is permanently recovered. The affection of the eye often alter-

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nates with other symptoms, the ears become worse, and the eyes get better, or *vice versâ.*"

It is manifest, since the local affection is here engrafted upon constitutional disorder, that our remedies should be at once directed to the latter affection. Mr. Lawrence advises that we should commence with calomel and jalap, or rhubarb, as a cathartic—this to be repeated several times, and to be followed by a mild alterative course. When a state of debility has been induced, he advises the employment of tonics. Mr. L. agrees with Mr. Mackenzie, in preferring the sulphate of quina to all other tonics, and in pronouncing it the most useful of all the internal remedies, and in this disorder he gives a grain twice a day.

In regard to diet, Mr. L. decidedly condemns the administration of strong animal food, and of stimulating drinks for the purpose of remedying debility. The system cannot bear the action induced by it. The diet of such subjects should be nutritious, but not stimulating. A moderate portion of animal food may be allowed once a day. Well-dressed vegetables, ripe fruit, bread and milk, and farinaceous articles should constitute the residue of the diet.

The warm bath is a useful agent, especially when the skin is harsh and dry. Warm clothing, exercise, wholesome air, and change of air, are not to be neglected.

In regard to local treatment, Mr. Lawrence advises that when the disease assumes any thing of the character of common inflammation, leeches may be proper, although they cannot be expected to modify the specific character of the disease. Bleeding will exercise no control over the remarkable intolerance of light, but will often aggravate it. Warm applications are generally most grateful to the patient. When the irritation is great, the local application of opium in some form will be found beneficial. Stimulating applications are decidedly beneficial, when the primary inflammation has been overcome, and the bowels have been brought into a healthy condition,—of these the nitrate of silver is preferable. Counter-irritants are useful after depletion.

Passing over chapters xiii. xiv. and xv. we call the attention of our readers to

CHAP. XVI. *Inflammation of the Anterior Chamber,*—so termed because the visible changes are nearly confined to that part. This disease commences with loss of transparency in the cornea, it becoming dull and nebulous; the anterior chamber is

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cloudy; there is a pink zone around the cornea; the iris is dull and reddish. An effusion of yellow matter takes place in the anterior chamber. There is also a considerable degree of constitutional disturbance.

Treatment.—This form of disease is usually controlled by simple means; local bleeding, aperients and mercurial alteratives are to be resorted to in succession.

Hypopyon is a form of disease often resulting from the last described, but more frequently it results from the bursting of a corneal abscess—sometimes from iritic inflammation—sometimes from general inflammation of the globe. Mr. Lawrence queries whether we should follow the practice generally recommended of puncturing the cornea and discharging the pus-like matter from the chamber. Notwithstanding the contrary advice of Ware, Richter, Langenbeck, and others, our author advises that the cornea should never be incised for hypopyon. He assures us that if the inflammation is subdued, the matter will be rapidly absorbed, and, if it is not, the incision will surely aggravate it.

We cannot fully concur with Mr. Lawrence in this particular. Although we admit that usually absorption will follow the use of active anti-phlogistic measures, we are confident that when, previous to the use of these means, the matter has accumulated in quantity, so as to exercise an irritating distension of the eye, the organ will be placed in the condition of parts suffering a paronychia. Fibrous tissues are suffering distension, and this source of irritation will more than counterbalance the good effects of the most active depletion. Under these circumstances the operation appears to be indispensable.

Chap. XVII. *Iritis.*—It is only to our author's treatment of this form of inflammation that we briefly advert. Mercury and the lancet are well known to be the Herculean remedies with which this disease is assailed. Some practitioners, however, dreading the injurious effects of mercury on the system, confide in the lancet alone; while others, knowing the uniform and prompt efficacy of mercury, employ it without the aid of the lancet. Mr. Lawrence, however, regards them as valuable adjuvants to each other, and always uses them conjointly.—"Mercury is used with the greatest effect in the active period of the inflammation, and in the acute form of the complaint."

Passing over several subjects of less interest to the practitioner, we present our readers with the author's judicious observations on the *treatment of the opacities of the cornea.*

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"*Treatment.*—Opacity may be confined to the external or mucous layer; it may be seated in the cartilaginous laminæ, or in the internal serous surface of the part; or it may extend through the whole texture. The former is the most favorable case; the latter the least so. When the corneal laminæ are affected throughout, we cannot do much good. Our first object, where inflammation is present, is to put a stop to it. If we do this, and wait a little, we shall find that the opacity will diminish of itself, the newly deposited matter being absorbed, as inflammatory tumefaction subsides in other parts of the body. In children, the processes of nutrition and absorption are vigorous; there is an active interchange of the component parts of the body, and in them the changes which the cornea undergoes, are very striking; although the cornea of a child should be so opaque as to render the iris invisible, it will completely recover its transparency, as in the cases related at pages 174, 175. After reducing the inflammation, and removing from the eye all irritation, after waiting to see what can be done by the natural process of absorption, we may adopt further measures for lessening the opacity. The effect of counter irritation by issue, or seton in the temple, with attention to diet, and to the state of the stomach and bowels, will often be very considerable. The absorption of the newly deposited matter may be assisted, after these means have been put in force, by the employment of stimulants or astringents; the best of which is a solution of the nitrate of silver, commencing with gr. ii. to the ounce of water, and gradually increased in strength. This may either be dropped into the eye, or applied to the opaque part by means of a camel-hair brush. When red vessels are seen proceeding to the opaque part, their division has been recommended. It cannot be of any service.

"Some forms of opacity may be remedied, others not. I shall mention first such cases as admit of recovery. A general dullness or haziness, and sometimes a thin nebula of the cornea occur in iritis, and other internal inflammations of the eye; the change appears diffused through its whole texture. Often a more or less thick film covers the cornea in the purulent ophthalmia of infants, the conjunctival layer being thickened and loosened by the inflammation; the cornea assumes a pale greyish color, and this appearance sometimes extend over the whole surface. A general nebulous or more opaque state of the cornea is produced in *corneitis*. There is also nebulous opacity, often accompanied with some redness, in strumous ophthalmia. These four cases present examples of impaired transparency, which admit of complete relief; and in all of them, although the opacity should be considerable, it may be removed by the treatment just pointed out. Indeed, it is sufficient in these cases to arrest the inflammation which has caused the opaque change, and the latter will disappear of itself. In the first, and the two last instances, there is general disturbance of the corneal circulation, and interstitial deposition; in the second, the mucous layer alone is the seat of change. The dotted opacity caused by inflammation of the membrane of the aqueous humor also disappears, when the inflammation has been arrested.

"Another and a denser kind of opacity arises from inflammation of a more serious character. The change affects the surface and the corneal laminæ more or less deeply: it is interstitial deposition under considerable inflammation of the corneal texture. It may exist in various degrees, from the slight cloudy appearance of a nebula, properly so called, to the most dense form of leucoma; in the first we find that the change of structure is confined to the external lamellæ of the cornea, whilst in the more dense forms the whole

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thickness of the part has been altered in structure. These white and dense opacities may be diminished, but we cannot remove the whole of the opaque spot. They may be occasioned by an escharotic, such as lime, applied to the surface of the cornea, or by the effusion of matter, when suppuration has taken place. In the latter case, the opacity has at first a yellowish, and subsequently a light brownish tint. These are opacities which admit of partial relief, but not of complete cure.

"The third description, which does not admit of cure, is the firm white shining cicatrix of wounds or ulcers. When an ulcer has extended into the corneal laminæ, the cicatrix is a permanent white mark; but if it should be superficial merely, like an excoriation, it may leave no trace. A cicatrix is distinguished by its sharply defined margin, and shining appearance: the edge of an opacity produced by an interstitial deposite is gradually shaded off. In the dense opacity of the entire texture called leucoma, the organization is so much changed, that we can do no good by any treatment as respects the state of the cornea. It will depend upon the situation of the leucoma whether the case may be relieved by the operation for artificial pupil or by the use of belladonna."

CHAP. XXIII—*is devoted to the important subject of Cataract.* Errors in the diagnosis of cataract are undoubtedly more frequently committed than in that of almost any other affection of the eye. It is a form of amourosis with which it is liable to be confounded, and as this latter requires the most prompt and energetic interference, while the former is allowed to become complete before we operate, the distinction is of great importance. Cataract usually comes on slowly; but may happen in a few hours. It does not, even when complete, wholly destroy sight. In cataract the patient sees better by twilight, because the pussit is then expanded and admits rays around the border of the cataract. The opacity is distinguished from that of glaucoma by its being near to the pussit. In cataract, the opacity is proportioned to the loss of vision.

It is believed by some that in incipient cataract, remedies, internal and external, may sometimes dissipate the opacity. Patients, are therefore, on this account, frequently subjected to severe courses of medicines, and with that "hope deferred which finally maketh the heart sick." Mr. Lawrence unequivocally declares that they have "no influence whatever on the cataract, *absolutely none.*

On the comparative advantages of the three operations for cataract—extraction, depression, and that by which absorption is produced, Mr. Lawrence has the following remarks.

The next point for consideration is the choice of the operation. From the time of Celsus, in whose work we find the first account of an operation for cataract, until the last century, only one method was practised, that of introducing a small needle into the eye behind the iris, and pushing the lens down-

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wards out of the axis of vision. That operation, inasmuch as it displaces the lens downwards, has been called *depression;* it is also called *couching.* It is accurately described by Celsus, and his manner of performing it is nearly the same as that now practised. About the middle of the last century it happened, in consequence of an opaque lens having escaped through the pupil into the anterior chamber, that Daviel, a French surgeon, thought of making a cut through the cornea to let it out, which he did. Hence he was led to propose and practise generally this method of removing an opaque lens from the eye, which has since been called *extraction*, and much improved. This operation consists in making an incision through the cornea, lacerating the crystalline capsule, and forcing the lens out through the pupil and the opening made in the cornea. When this operation was introduced, a controversy arose as to the merits of the two operations, extraction and depression, each of which had its warm advocates. The writers on this part of surgery have frequently drawn up in parallel columns, the advantages and disadvantages of the two methods, and have usually endeavored to demonstrate the general superiority either of extraction or depression, as if it were necessary to choose one or the other, and practise it exclusively. More recently a third mode of operating has been introduced, and extensively employed, in which the lens is neither extracted nor depressed, but disturbed or divided, and left in its place to be removed by absorption. It is called the operation by *solution* or *absorption.*— In this latter mode of proceeding, the needle may be either carried through the cornea and pupil, or be introduced behind the iris, as it is in the operation of depression. These two methods are distinguished by the names of the *anterior* and *posterior* operations. No person who understands the subject, would advise any one operation to be employed exclusively. Each method has its advantages, and is eligible under certain circumstances; our object then should be, not to select one operation with the view of practising it in all cases, but to consider the circumstances which give a preference to one or the other, and to select in each instance that which is best suited to the particular form of the complaint."

We have thus endeavored to present to our readers such important sections of the work of Mr. Lawrence, as will enable them to estimate its merits, and learn his opinion in regard to some interesting and doubtful points in ophthalmic surgery. The work will be acknowledged to be one of great value; but as the elaborate work of Mr. Mackenzie, has been reprinted in America, this of Mr. Lawrence, though not inferior, will scarcely become generally known to the profession in this country, except through the medium of reviews. We can, however, recommend it in high terms to all who have it in their power to obtain the English copy. N. R. S.

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ART. IX. *Memoir of the Life and Medical Opinions of* JOHN ARMSTRONG, M.D. formerly Physician to the Fever Institution of London; author of "Practical Illustrations of Typhus and Scarlet Fever," &c. &c. *To which is added, an Inquiry into the facts connected with those forms of Fever attributed to Malaria or Marsh Effluvium.* By FRANCIS BOOTT, M.D. &c. &c. Vol. I. London, 1833. 8vo. pp. 616.

(Review continued from volume i., p. 158.)

CHAP. III.—In our former notice we confined our remarks to Dr. Armstrong's opinions on common fever—the present article will have reference to his second class, or specific fevers. In the first it will be recollected that he contends for a common character arising from various causes that produce excitement, out of which inflammation incidentally arises in those textures already predisposed by some latent weakness. We particularly noticed these predispositions, upon which hinges, we asserted, so much of the pathological history of fevers. When Dr. Armstrong speaks of inflammation arising out of excitement, although it would appear, at first sight, to afford an argument in favor of the essentiality of fevers, we remarked that such is not the fact, for if we look at all the phenomena, we perceive that in truth he means nothing more by his distinction, by which inflammation seems a sequence upon fever, than that in the course of disease the grade of excitement is increased, or, as he would express it, increased local determination is the first mark of disease, which in its progress assumes the full development of inflammation. So that it is a difference of terms rather than of fact, for no one, we suppose, will predicate of simple excitement or of simple irritation the same pathological products as are conceded to the higher grades of excitement or inflammation. We repeat these remarks, because in the chapter under consideration he distinguishes the character of each of his classes by saying, that while "specific fever, in its fullest development, has a determinate inflammation, the product of a peculiar cause, in common fever there is, at first, a general disturbance of the functions, without any very evident local effect, and a subsequent inflammation, which is not the product of an external exciting cause, but the result of an internal predisposing one." The general sketch may be true so long as it is confined to the simple incident heretofore noticed, namely, that in scarlatina and rubeola there is a peculiar laryngeal and pharyngeal affection, perfectly characteristic

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and distinctive, so far as the mere locality is concerned, from other febrile diseases. But, whatever argument this may possess, in aid of Dr. Armstrong's division, still there is nothing similar to be adduced in regard to those fevers, styled essential, and which the author calls specific. Typhus, remitting, and intermitting fevers show no determinate inflammation other than that belonging to his common fevers. They have nothing specific in their character, being only different degrees of excitement, involving, as they ascend the scale of severity, one or more organs, and thus gradually deranging the physiological phenomena, and developing new, varied, and complex signs of disease. Thus, for instance, we have a primary simple excitement of the gastro-enteric portion of the mucous surface proceeding in its course, first, from an accumulated local intensity, and secondly, from a centrifugal implication either of organs of most intimate sympathetic relation, or of those of mere contiguous connexion. Hence arise all those complications which distinguish typhus from simple intermitting fever. There can be but little difference of opinion on this subject, if it be only borne in mind, that the last, running through a remitting form, often terminates in the first, and that the reverse sometimes takes place, as the vital actions are returning to their physiological condition. That there is nothing specific in these complications is evident, also, from the circumstance that at different periods different combinations occur; while the inception of all the various forms of what are called essential fevers, almost invariably indicates some lesion of function or structure of the great internal cutaneous surface. We are aware that the axiom has been strongly contended for, that typhus, in the termination, must have been typhus in the commencement, but this error, which seemed necessary for the support of the doctrine of personal communicability, is fast disappearing from our books, in proportion as facts have narrowed the belief in contagion within the bounds of a very few diseases, and those especially of an eruptive form.

Governing ourselves by the tangible demonstrations in post mortem examinations, we would ask whether under the most favorable circumstances, Dr. Armstrong could have affirmed of the lesions manifested in any ordinary case, that they were the result of his specific or of his common causes? If not, where is the specificness? Certainly not in the pathological developments; for although the amount of lesion might be greater in the higher than in the lower grades of disease, yet as this

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amount is not invariable, it can in no other way be distinctive, than in merely determining the grades of what in his own case, for instance, he would call identical diseases; viz: typhus, remitting and intermitting fevers. But it will be said, that we must look at the causes, which, as they differ in the production of inflammation, the one "external," operating from without, the other "internal," operating within, so must they necessarily be attended with different effects, and hence the specific form of those that arise from specific causes. But do we know any thing of these specific causes—malaria or marsh effluvium, or, at least, are we sufficiently acquainted with their essence, to predicate any thing positively of their effects? If we cannot, it were far better to suspend our opinion of their absolute character, than to assume any conclusion upon a dogma which has only probability for its support—for much may be said against the prevailing notions in regard to malaria, so much, indeed, that on this subject scepticism seems the most proper position of the mind.

When, in relation to this inappreciable cause, Dr. Armstrong makes the following assertion, we most strongly dissent from him, however we may go the whole length of the doctrine which this opinion is intended to support. "Malaria, then," says he, at page 163, "I hold to be the primary source of typhus fever. That I consider as a settled question." We think it, on the contrary, rather a vexed question, and for the simple reason which, as we shall presently show, led Dr. Armstrong to make three "specific" forms of a "specific" fever. It is the above opinion, however, placed by the side of the general assertion that remittents and intermittents also originate from the same causes, that enabled him to insist as strongly as he did upon the identity of all these fevers. Medical men, in this country, are all familiar with the fact, that in some districts, particularly in some of the New England States, typhus sometimes prevails extensively and fatally, and yet the inhabitants know nothing of intermittents. The doctrine of concentration and dilution cannot hold in these cases, and yet there must be some cause for the epidemic nature of the disease, confined as it always is to particular localities. There must be some physical distemperature, (a vague term we confess, but necessarily so from the uncertainty of all our knowledge on this subject,) something peculiarly affecting the population of these districts, which, under no circumstances at present existing, can give rise to the other forms. But this does not affect the argument in favor of identity—this we place on higher grounds, and

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altogether without the range of causation; for we contend that causes, whether specific or common, have almost nothing to do with the pathological signs which are of so much importance in contemplating disease. In counteracting derangements of the organism; in arriving at just conclusions on the nature of these derangements; their developments, manifestations and relations, it is perfectly immaterial whether arsenic or malaria, lead or marsh effluvium, be the pathogenic agents, for we have but one condition, varied, indeed, by circumstances—yet but one condition for consideration, viz: excitement, running through its forms or grades, from simple to grave and complex, with its pathological concomitants of altered nutrition—the phenomena of what is termed deranged vitalism. Modifications, of course, will vary each form as it appears under a typhus, remitting, or intermitting character, and this character will likewise vary, as it is controlled by temperament, predisposition, and the operation of the innumerable agents which are ever in action, and so well succeed in producing their effects mediately or directly on the living organism. These, however, are but various colorings of the same picture—they are incidents which make up a character, but the composition still stands as a whole—is still identical.

If these views be correct, we will at once perceive that any division, drawn from mere causes, particularly where their nature is problematical, cannot lead to any valuable conclusions on the character of fevers. Granting, indeed, all the importance to malaria which is so generally demanded for it; conceding even a knowledge of its essence, yet, as other agents produce diseases where, as Dr. Armstrong observes, he could not distinctly draw the line of demarcation between these and malarious typhus, a strong evidence is afforded of an identity of the pathological condition of the organs or tissues affected, which destroy any thing like a specific effect from this agent; that is, an effect arising from a specific cause, as distinct from all other effects as the cause is different from all other causes. On this point we find the following among Dr. Armstrong's arguments against the contagious character of typhus:—

"With respect to the low fever which sometimes follows puncture in dissecting, it also puts on so exactly the character of typhus from malaria, that losing sight of the original puncture, the inflamed absorbents up the arm, and the tender glands in the axilla, in twelve cases which I have witnessed, I could not have distinctly drawn the line of demarcation. Yet, in none of these examples has the disorder propagated itself, though I have noticed their progress very narrowly, and though most of them occurred among my pupils in confined situations. Moreover, Gaspard has shown by experiment, that

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putrid animal or vegetable matter, introduced into the blood, occasions a fever of the typhoid or typhus character.

"It would appear, then, that a fever, having a peculiar intermittent, remittent, and continued character, arises from malaria, and malaria alone, as far as my observation goes; but it would also appear that a fever of a continued form, with a typhoid or typhus character, arises, secondly, from a local taint or contamination of air, from the odor of the stools, urine, breath, and perspiration; and thirdly, from the introduction of putrid matter, as in the case of puncture from dissection, or of the experiments made by Gaspard on the lower animals."—pp. 167, 168.

If typhus be, as is contended by Dr. Armstrong, a specific disease, here then we have three specific typhus fevers, and for aught we know to the contrary, the class may be extended to any number, all of which, depending upon as many causes, whether three or three hundred, would be as proper as the mode of classification of which Rush observes, that it is not less philosophical than to say "that men are of different species because some are tall and others short, or because some are long and others short-lived." If this form of fever, then, have nothing specific in its nature, neither can such a character be allowed to pertain to those of the lower grades.

We follow Dr. Armstrong in his views on other points, particularly in the assertion that the distinguishing characteristics of each form merely depend on the degree of the pathological effects. With a saving clause in regard to the positiveness with which he speaks of malaria, and a want of sufficient distinctiveness as to the degree of excitement or irritation present in the intermitting form, the following cannot meet with much objection:—

"But a difference in degree does not constitute a difference in the nature of a disease. It is admitted that intermittent and remittent fevers arise from malaria. Yet they differ in symptoms because they differ in pathology; for the inflammation which is excited in the one is absent in the other. When this is excited, it prevents the intermission of the symptoms, and consequently we find that the cold stage which begins every paroxysm of the intermittent, is absent in the exacerbations of the remittent.

"Now the remittent and continued fevers merely differ in the intensity or extent of this inflammation, which is greater in the last; and hence the symptoms are still more modified in the continued form, and we lose even their remission, because the higher degree of the inflammation keeps up the heart's action and the heat of the surface to one uniform standard, subject only to that evening exacerbation which is observable in all febrile diseases.

"But the identity of these latter forms is proved by the inflammation attacking the same parts, viz: the brain, the mucous membrane of the lungs, and of the intestinal canal, and the liver; and by its giving rise to the same symptoms, varying only in proportion to the degree of the internal conditions. They both are characterized by a dropping of the eyelids: a glairy eye; a combina-

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tion of physical brightness mixed with an intellectual dullness of expression; a leaden or purplish hue of the lips and cheeks; a huskiness of voice, and cough; evacuations of glairy mucus and dark bile; obscure uneasiness on pressure over the epigastrium and abdominal region; the tongue redder than natural at the edges, covered at first with a dirty whitish fur in the centre, and becoming dark in the advanced stages; and a faint sickly odor of the breath. This identity of pathological effects and symptoms is a convincing proof of identity in the original exciting cause, and in the nature of the disease it produces."—pp. 175, 176.

We only give a passing notice of Dr. Armstrong's opinions on the contagiousness of typhus, which are expressed at some length in this chapter. The subject is familiar to the profession in our country. His arguments in favor of the negative of this question are drawn from the facts of its limited confinement to certain dwellings, parts of neighborhoods, or portions of country, and the very rare occurrence of any thing like properly authenticated instances of personal communication of the disease, where the sick have been removed from the infected district to a purer atmosphere. This last argument needs no discussion on this side of the Atlantic, where the immense mass of information collected by American physicians, has contributed as much honor to their correctness of observation and good sense, as it has efficiently destroyed the odious dogma formerly taught us in regard to the personal communicability of typhus as well as of yellow fever.

Dr. Armstrong's other argument is drawn from the identity of remitting, intermitting and typhus fevers. As these undoubtedly arise, as he contends, from malaria, and as the two first under no circumstances are claimed to be contagious, so cannot the last, or the identity would be lost. This opinion we have already noticed, and we pass on, therefore, to the next chapter, which contains a discussion of the symptoms and treatment of typhus.

Chap. IV.—After some preliminary remarks on intermitting and remitting fever, Dr. Boott commences at once with the particular subject of the chapter. Following his example, we will just give the following, and then proceed with our author. A notion of Dr. Armstrong's opinions in regard to the first form, will be gained from the concise description which we quote:—

"Intermittent fever is peculiar in having, in rapid succession, a cold, hot, and sweating stage, which, after an intermission, return at regular intervals. The character of this common disorder is so well understood that I need not enlarge upon it. It is a simple fever, or at least it is unattended by acute or subacute inflammation. A low degree of chronic inflammation is, perhaps, not incompatible with it; but if inflammation to any appreciable extent or de-

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gree supervenes, the type of the fever is changed into that of the remittent or continued forms.

"In the cold stage, or that of oppression, there is a variable degree of venous congestion, which is followed, in the hot stage, by reaction, in which the blood is equally distributed throughout the body; the organs are excited, but not inflamed; and this terminates in the stage of collapse, by sweating, leaving in protracted cases a sallowness of complexion, and some traces of languor and debility.

"The treatment of this modification of fever is too well known to require any details. It should be remembered, however, that inflammation may arise in the stage of excitement, and that the employment of bark or the sulphate of quinia is not, therefore, in all cases equally admissible.

"In what has been called an inflammatory constitution of atmosphere, ague is apt to pass into an aggravated remittent form, if treated early by bark. It requires, under these circumstances, the same decisive antiphlogistic treatment as the remittent; and the greatest caution is necessary in the exhibition of tonics. The same disease, in the same place and at the same time, contracted in the country and the town, may sometimes require to be cured by opposite remedies; for bark will stop the one, and aggravate the other."—pp. 180, 181.

The cautious administration of bark and its preparations, recommended in the foregoing extract, as well as in that which follows, when speaking of remittents, is deserving of attention.

"When the remission becomes distinct, indicated by the state of the skin, tongue, and pulse, the sulphate of quinia should be given every hour or two, from the first appearance of the positive abatement of the fever. But the effects of this remedy should be watched; for if it increases the fever or the local disturbances, it should be withdrawn, and calomel substituted, until the quinia is again indicated by a distinct remission. When it operates successfully, it remarkably arrests the fever; and its continued exhibition for a day or two after the symptoms have subsided, will, with rest, an appropriate diet, and a fresh atmosphere, produce convalescence."—p. 182.

It is well known that Dr. Armstrong's later opinions of the origin and nature of typhus widely differed from those expressed in his earlier publications. We pass over his biographer's remarks on this subject, with merely giving the general result of Dr. A's investigations.

"It afterwards became an axiom with him, that special causes always produce special effects; and, taking a broad view of the common symptoms of typhus, as they appeared in the majority of cases, he referred them to morbid impressions in particular parts, and found that he was justified by an appeal to the phenomena of the disease during life, to the effects of remedies, and to the appearances presented after death. These effects, so uniform in certain parts, he considered as the invariable results of the operation of the special cause; and if other parts became occasionally implicated, he referred their disturbance to accidental predisposition. He could not legitimately ascribe them to the influence of the contagion, or subsequently to that of malaria, because they were not uniform in their occurrence, while the specific effects, as he considered them, always were so."—p. 186.

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The modification of the character of typhus in respect to the severity or progression of its symptoms, Dr. Armstrong of course, considered to depend upon the condition of the persons attacked, and "upon the effects it (typhus) produces on the organs which are particularly exposed to the operation of its remote cause." Intermediate shades of mildness and severity necessarily arise, and these are illustrated by three examples, but for which we are obliged to refer our readers to the work itself, as our allotted space will not allow of their quotation.

The pathology of typhus has always been a subject of interesting investigation, and there has ever been a diversity of opinion as great as the difference of general doctrines entertained by medical men, who for instance in our own age as essentialists or localists, or as the followers of Clutterbuck, Mills or Broussais, or of Louis, Andral, Boisseau and others, make it to arise out of itself, or from a primary affection of the brain or stomach or both simultaneously, or either, or any organ or tissue indiscriminately. This diversity of doctrines entertained by men of research and of more than mediocre intellect can only be referred for explanation to the complexity of the pathological signs, arising from the rapid contiguous or sympathetic implication of organs, and the prominence of several, which while they give a formidable and distinguishing character to the disease, are made to assume a preference of locality without proper regard, we conceive, to the relation which each has in reference to the stages and developments. Errors in the observation of sequences must ever lead to illogical results, and they are always more liable to occur when the relations of time progress so rapidly to a general effect as to leave the first steps to a just deduction involved in perfect obscurity. This, we are of opinion, is very much the case in regard to typhus; and what has added to the complexity, is that post mortem examinations here give us a grand conclusion in which are manifold developments, but which leave in themselves no clue to the preceding acts of the drama. Much light, however, may be thrown upon the intricacies of this important subject by a careful analysis of the disease in its progressive developments of physiological derangements; tracing it back to its identical but less formidable manifestations, as shewn in the simple or less complicated forms of a remitting and intermitting fever; referring to the relation of organism to its functions, the stimuli properly promotive of these functions, the application of those stimuli for the equipoise of health, and marking the facility with which errors

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occur from the operation of general and external agents, and the organs or tissues in which these errors are most apt to arise; to do all this, we say, may give us some hope of arriving, if not at truth itself in all its possible perfection, at least to as near an approach as our own senses, and the revealable essence of physical action will allow.

Dr. Armstrong's pathology of typhus, we regard as far from being satisfactory. First, referring to the symptoms, he divides the course of the fever into three stages, viz: "of depression, of excitement, and of collapse, each succeeding to the other, at somewhat regular intervals of time." Malaria according to him, operates as a powerful depressant, probably arising from its absorption and thence effecting a vitiated state of the blood. The system rising from this depression, (for he justly argues against positive debility,) there ensues a concurrent excitement or *second* stage; from this excitement, or from the "local disturbances" recurring at an intermediate congestive stage, as we understand it, arise the inflammations of the brain and other organs. The specific effects of the malaria, for so we must consider it, is a peculiar inflammation of the mucous membrane of the bronchia. This condition which Dr. Armstrong so much insists on, is the principal cause of the *third* or stage of collapse. His rationale of this result is explained below. As the stage of excitement ceases, that of collapse becomes marked by the evidences of a want of a healthful change of venous into arterial blood; the constitution of this fluid is so altered, as that the former may be said to circulate in the system of the latter and thus "tends to stupify the brain, and to obscure the general sensibility. The heart and the muscular system fail in their wonted energies, all the functions languish, and the strength is completely prostrated." The signs of this condition, are the dry, glazed tongue, the soft pulse, the diminished heat, the sunk position and the smothered sensibilities observed at this period. The morbid anatomy of the disease is detailed in the annexed paragraph, which with the analysis of the general symptoms, will have their proper interest with the reader.

"In those cases, therefore, where typhus has had its usual course, we find unequivocal traces of inflammation in the brain or its membranes; the pia mater is loaded with dark blood; the arachnoid is milky and opaque from an effusion of serum and lymph between them and in the ventricles; the substance of the brain is preternaturally vascular, exhibiting numerous red points when cut into. Similar appearances are generally found in the spinal cord. The mucous membrane of the bronchia is loaded with dark blood, and coated with a peculiar sticky secretion like varnish, and with more or less frothy mucus.

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When this is wiped off with a sponge, the blood in the injected capillary vessels assumes a brighter color from the influence of the air, which had been prevented during life from coming into free contact with the blood, from the impediment which the besmeared state of the mucous membrane presented. The liver and its associated veins are congested with dark blood, more especially in those cases where calomel had not been exhibited. The mucous membrane of the stomach and intestines exhibit variable traces of inflammation, denoted by redness, thickness, and pulpiness, and especially at the lower part of the ileum, where ulceration is generally found in protracted cases, extending in some instances through the small and large intestines.

"These appearances, variable in degree, are sufficient to explain satisfactorily the ordinary symptoms of typhus, which will naturally present shades of difference, from some parts being occasionally more affected than others. Thus, in one case, the affection of the nervous system may predominate; in another, that of the mucous membrane of the chest, or of the alimentary canal and the liver; and not unfrequently other symptoms, depending on inflammation of other organs, may be developed, and occasion various complications in the phenomena of the disease during life, and in the morbid appearances after death. Thus, we may have pleurisy, or peritonitis, or inflammation of the substance of the lungs or of the pelvic organs, or laryngitis, combined with typhus; but these effects are uncertain, and may be said in consequence not to belong essentially to the disease.

"We find a satisfactory explanation of its usual character in the disturbance of the parts which are always more or less implicated. That of the brain and its membranes explains the uneasiness and pain in the head, the glairy eye, the active or passive delirium, and, ultimately, the state of stupor and insensibility; that of the mucous membrane of the bronchia, the husky voice, the cough, the leaden or violet color of the lips and cheek, the dark sordes on the tongue and teeth, the soft and feeble pulse, the weak respiration, the profound debility, the diminished heat, and the sunk position; that of the mucous membrane of the abdomen, the uneasiness in the epigastric and abdominal regions, the furred tongue, the redness of its tip and edges, the glairy mucus observable in the evacuations, the frequent diarrhœa; and that of the liver, the pain and distention in the hypochondriac region, and the dark biliary secretion which is perceptible until the approach of convalescence."—pp. 191, 192, 193.

The views entertained by Dr. Armstrong on the treatment of typhus are familiar to our readers; his volume on this fever being in possession of most physicians. In the work before us we find much that is necessarily a reprint of matter long before the medical public. This will prevent us from doing more than calling the attention to some of his remarks on the use of purgatives and stimulants. The opinions here expressed cannot be too strongly enforced or too carefully remembered. The sentence that we have put in italics, presents much for reflection to any who from their practice would seem to suppose, that the final cause of the existence of an intestinal canal, is to demonstrate the operation of purgatives. That the effusion here noticed, in nine cases in ten, is the effect of irritating medicines,

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we do not hesitate to assert; and we as confidently affirm that the intense mercurialism which is so apt to be produced by the indiscriminate use of calomel, a remedy certainly most desirable in its proper application,—is one of the most frequent causes of hemorrhage from the bowels. Does a form of fever receive the nosological christening of *bilious*? Who has not observed how mechanically calomel is immediately administered, and for what therapeutical intention? Why, to produce a flow of bile! The great object to be attained, is "to get the liver to act," no matter what may be the condition of the tissues upon which the medicine produces its peculiar effect; for we cannot believe that calomel as a cholagogue has any other specific action than the superior irritation which it causes, particularly in small doses, upon the small intestines, and the consequent effect upon the hepatic system from the mere sympathetic relation, which is known to exist among the whole chylopoetic viscera. Even if our view of the mode of operation be incorrect, still we object to all notions of specificness in relation to mercurials and most earnestly contend against any opinion or any practice, which would make any individual remedy applicable to a disease which has its whole character perhaps formed from nothing more rational than the nosological features depicted by some ingenious theorist; for, it cannot be forgotten by any one, that the circumstances of every case of disease must vary every thing like a general rule of treatment; that measures of relief must be modified by the exigencies of the patient; and, that that physician performs his duty most faithfully, who only forms his opinion upon the most deliberate consideration, and who feels in every instance the necessity of a sound discrimination of the demands of individual instances, rather than an implicit reliance upon men, upon books, or upon any general routine established upon what is called experience.

To give to any general combination of symptoms a name, and thence to deduce a specific mode of practice, cannot be correct, from the very fact that there can be no such combination so invariable as to become an established law. The difference of individual constitutions, habits and predispositions forbid this. Mischievous as must be the neglect of this fact, it is less so perhaps than when a bad rule is applied to erroneous pathology, and such we consider the universal character of *bilious* as applied to any and every derangement of the abdominal viscera, with the universal panacea of calomel as the only appropriate remedy. We do most confidently assure those who may smile

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at our earnestness, that the intestinal canal, so far from being a mere viaduct for the "flow of bile," has an organization as unfitted to withstand the action of irritating substances, as any other organ in the body, and that its peculiar relation to external agents so far from rendering it less impressible or inuring it to any amount of hardships, as is generally supposed, makes it by this very exposure, remarkably the seat of initial or consecutive lesions in the greater number of severe or protracted diseases. We can also give the assurance, that any immoderate or indiscriminate administration of calomel, is sure to be followed by a degree of local and general irritation, wholly incompatible with any excitement already existing; and we consider that use indiscriminate, which is pursued without any reference to the effects of increased or diminished doses, or to the condition of the tissues upon which they directly act; or from any false notion in regard to any specific hepatic derangement, or from any self-gratulation at the fancied possession of any one mode of treatment which is applicable to all the forms of any affection.

The following remarks, therefore, will apply not only to typhus, but to the whole class of fevers arising from simple or grave excitements of the great internal mucous membrane. In extending their application we do no violence to the best pathological principles, which recognize this as the great original seat of all that class of diseases called essential fevers. In regard to the small doses of calomel, we of course differ in opinion from the author, except with his qualification, "if necessary." For it is the smallness and repetition of the dose, that we most object to, where irritation is specially to be avoided in any acute affection of the mucous membrane. In simple excitements we would always prefer to give calomel "if necessary," in a full and free single dose. A sedative effect follows upon its correct administration in such cases, which no other purgative is capable of producing. Small doses we deem admissible, only when given as alteratives or as revulsives, and in certain conditions of the intestinal lining where the vitalism or tonicity of the parts may require an elevation suitable to healthful function. But to return to the remarks of the author.

"There are two conditions which especially render caution necessary in the use of purgatives in typhus; and the one is when the inflammation is concentrated in the mucous membrane of the intestines; and the other, when hemorrhage occurs from the bowels.

"In some epidemics the mucous membranes of the alimentary canal bear the principal shock of the disease, as is indicated by the local pain, the state

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of the tongue, the slimy stools, and the frequent diarrhœa. These cases, if seen early, may be controlled by general bleeding; and when the force of the fever has been lessened by its means, leeches may be used with advantage. Small doses of calomel may be given, if necessary; but all drastic purgatives should be avoided, and in those cases where the secretions of the liver are natural, small doses of castor oil are alone required.

"In hemorrhage from the bowels, which generally occurs in the advanced stage of typhus, perfect rest, fresh air, and a mild farinaceous diet, are all that can be advised; though, if the tongue be moist, or if the exhaustion from the loss of blood be great, a full opiate is required. *This effusion of blood from the irritable mucous membranes is principally occasioned either by the injudicious use of drastic purgatives, or of some medicine, as nitre, which is so powerful an irritant that its use even in small doses is very questionable.*

"Sometimes there is a state of general irritation which comes on suddenly in the advanced stage of typhus, and which may exhaust the patient in his feeble condition, if not promptly removed. It is indicated by restlessness, loss of sleep, constant motion of the arms, and sometimes by a wild delirium. This state is brought on frequently by too close a room, or too high a temperature; and fresh air will often remove it. But opium is in most cases its true antidote, and may be given with immediate advantage where the tongue is moist. It must be more cautiously administered when the tongue is dry and glazed.

"In the case of habitual drunkards, or of persons who have been accustomed to drink much malt liquor or spirits, this state is by no means unfrequent; and if the habits of the patient are known, it may be allayed by small quantities of their accustomed stimulant, which does not operate prejudicially on them, as it would on persons unaccustomed to its use.

"This state of irritation, and the sudden collapse before alluded to, are the only occasions for the use of stimulants in typhus. The debility which attends its decline is the natural consequence of the disease, and is often attended by a low degree of passive inflammation; and stimulants merely give a transient and fictitious energy, which is succeeded by diminished action, having a tendency to keep alive the faint embers of fever and inflammation. They protract the disease; rendering abortive other and judicious means of relief; and frequently excite a chronic and fatal ulceration of the mucous membrane of the ileum, by prolonging the local increased action which attends the hypertrophied condition of the conglomerate glands."—pp. 208, 209, 210.

On the injudicious use of bark, Dr. Armstrong very correctly expresses himself; his remarks will apply as well to the preparations as to the bark in substance. Every one must have observed the evil effects of this as well as of all stimulants, when administered before the organism shall have assumed something of its physiological condition, and even then it is doubtful whether their use is permanently healthful. We perfectly agree with Dr. Armstrong on this last point.

"Bark, perhaps, at no time is useful in typhus, for it very generally offends the stomach, producing irritation and excitement: and the same may be said of other tonics. If the morbid conditions are removed, the natural recurrence of healthy action, with the gradual return of appetite and of sleep, will effect all that is essential to the perfect restoration of health."—p. 210.

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CHAP. V.—It was Dr. Armstrong's opinion, that yellow fever included three different affections; viz., acute hepatitis, the inflammatory endemic of the West Indies, and the epidemic bilious remittent; the present chapter is occupied with a discussion of the second of these, which arising from what he called *common* causes, is to be distinguished from the last, which owes its origin to a *specific* agency. We do not see the necessity of this distinction, any farther than the mere history of the disease is concerned;—the reasons given for thus distinguishing them, viz., external causes, we believe altogether erroneous. For we know nothing of either variety except as conditions of excitement, manifesting essentially the same symptoms of local origin, and only varying as do all other general forms of fever by the complications of lesions and the consequent modifications of pathological action.

The principal diagnostics in these two forms, arise from what seems to us a very simple circumstance, namely, that the "inflammatory endemic" begins with "an open and high excitement of the sanguiferous system, speedily followed by inflammation, which runs its course with great rapidity, and is succeeded by a profound collapse or exhaustion of the vitality, proportionate to the intensity of the acute symptoms, and the organic derangements that have occurred," while in the "bilious epidemic," there is an oppression of the vital powers which precedes the excitement. This last necessarily occurs, because malaria being the chief cause, and this, as we have already seen, being a depressant, the effect must be as specific as the cause, while common causes being the agents in the inflammatory form, the results cannot commence their manifestations by signs only consistent with the special effect of specific agents, or, they would no longer, we suppose, be considered as "common causes." This appears to be the pith of the argument. We are sorry that Dr. Armstrong was so much governed by causes in his contemplation of these fevers, because they blinded him, we think, to what we in this country are all aware of, that this higher form of excitement or yellow fever assumes its varieties of character, with shades of distinction, similar to what we observe in intermitting and remitting fevers, which in particular seasons assume modifications of complexity and severity not generally characteristic. The mere fact of a more intense or rapid excitement, or of a loss of the stage of depression in these two last "specific" fevers, certainly would not have been considered by Dr. Armstrong a sufficient reason for

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calling them specifically different affections. If the "bilious remittent yellow fever," always commences with a stage of oppression, and the "common inflammatory endemic" do not, still we see nothing more strange in this circumstance than in what takes place at different seasons in other affections. For all useful purposes they ought to be considered as the same disease, as in reality they are, while the seat of derangement is identical, with only more or less heightened shades of intensity, or more limited or extended implications of the same or other tissues or organs. Besides, if there be an inflammatory and a bilious remittent yellow fever, two distinct affections, to be distinguished the first as a common, the other as a specific disease, because in this last there is a remission or intermission of the symptoms which, it is asserted, does not occur in the other, how does it happen that in the preceding chapters, the identity of a *continued typhus* and a *remitting* and an *intermitting* fever are so strongly contended for? If the remission simply be the distinguishing mark, and such is the conclusion which we draw from the work before us, most assuredly this identity will be lost in those cases where this circumstance does not occur. How does Dr. Armstrong account for such facts? Without acknowledging the premises of his argument, still we may judge him by his own reasoning. Let us turn back to Chapter III. and we will find it asserted that the "outward distinction observable between them, (remittent and typhus,) is the remission in the symptoms of the one which does not take place in the other, an anomaly explicable on the *difference of intensity produced upon the disordered parts.*" Admitting malaria to be the cause of the assumed specific form of remittent yellow fever, may not the anomaly of an absence of remission in the inflammatory fever be explicable by the same argument that is made applicable to the continued form of typhus? But if it be said that this last does remit in its symptoms as convalescence approaches, or if any other argument of a similar nature be used, how will the difficulty be solved, in relation to that form of typhus that arises from dissection wounds, where, as in the extract on another page, we have shewn that Dr. A. asserts that it so completely puts on the character of his malaria fever, that losing sight of the puncture and one or two unessential circumstances, he could not, to use his own words, have drawn the line of demarcation? The truth is, that this mode of reasoning from external causes, can never lead to any just notion of the pathology of fevers; we must look at the lesions of function and structure,

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we must analyse the outward signs in reference to the original seat of disease, and compare the relations of the physiology and the pathology of organism, and thus base our knowledge upon something like certainty. To hunt for external causes, predicate effects upon mere hypothetical notions of their action, and assign a specificness of character upon the most palpable of uncertainties, and thence deduce distinguishing characteristics of disease has ever been the bane of medical philosophy. But we hope for a better state of things.

The morbid anatomy of this "inflammatory endemic" is very imperfectly detailed and unsatisfactory, the attention of Mr. Dickinson, whose descriptions are mainly depended on in the discussion, being evidently directed by preconceived opinions on the seat of the affection. Such as it is, however, we give the result of his dissections.

"The appearances, on dissection, are those of the highest degree of inflammation. In the head, Mr. Dickinson remarks that there is a great increase of vascularity, copious effusion of coagulable lymph, sometimes in an entire sheet between the membranes, and effusions of blood and serum. In the stomach a pellicle or film of lymph is found in parts of the villous coat, easily detached, and the membrane beneath either natural in appearance or highly vascular; numerous dark-colored spots are scattered over it, which present the mouths of vessels, from whence issues black blood; and these appearances are found more or less in the duodenum. The liver is spread over with dark-colored spots, frequently purple throughout its structure, greatly enlarged, and full of dark blood, or yellow bile; the gall-bladder full of dark viscid bile. If the chest has been much affected, as is sometimes the case, indicated by cough and pain, there are effusions of serum and coagulable lymph, adhesions, and the lungs are gorged with black blood; and the same appearances are found in the abdomen, with a thickened and shrivelled state of the omentum.

"It will be evident that these morbid appearances will vary in different cases, and may be found all united in some, or confined to certain regions of the body in others, according as the inflammation, which in common fever is determined by local defects, is more or less extensive."—pp. 225, 226.

Chap. VI.—The causes required to give rise to the bilious remittent yellow fever, are said to be four; viz: "Malaria, a state of atmosphere like that so often insisted upon by Sydenham, favoring the development of epidemic diseases; a high temperature; and that predisposition of body which is connected with a sudden change from a high to a low latitude, or with a great range of temperature from winter to summer. All these," it is said in the commencement of this chapter, "must concur to produce at least an epidemic prevalence of the disease." Sporadic cases however, may occur without the atmospherical distemperature just referred to. Malaria is the essential remote

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cause contended for. The discussion of the history of a disease which has been so long and so ably investigated by American physicians, and which is so familiar in all its points of controversy, as to render any extended notice of the subject in this place altogether unnecessary, will not require any thing more than a passing remark on one or two passages, and this particularly in reference to opinions already discussed. Indeed we find very little here but what,—as is acknowledged by Dr. Boott,—is drawn from the writings of American authors.

The views entertained by Dr. Armstrong and his biographer, in regard to this form of yellow fever, may be understood from the following:

"The proof of yellow fever being a higher grade of the common intermittent and remittent, is twofold; for it often commences under the milder form, and passes to the more severe; or, the reverse, it begins as a concentrated continued fever, and passes off under the form of a remittent or intermittent. I cannot conceive of any proof being more direct than this; and though this change of type is not observable in all cases, the exceptions cannot invalidate positive facts, and may be explained by the admission that a continued form of fever is as legitimately an effect of the operation of malaria as the two other forms, and that the causes which prevented the development of the milder modifications at first, equally prevented their appearance in the decline, possibly from the concentration of the cause, or the condition of the individual attacked. An additional proof is derived from the fact that, in every epidemic, cases of every gradation are observed; and the locality of the disease, confined to certain parts of cities, or to particular spots in the country, is to be explained by local causes, the effects of which vary according to their intensity, or to the predisposition of those exposed to their influence; and a still further proof may be drawn from the circumstance, that when a change takes place in the temperature, the severer form of the disease is checked, leaving the milder ones to exist alone."—pp. 237, 238.

The opinion here expressed will be recognised as that of Rush, from whose works especially, ample extracts are made, and on which the highest confidence is placed. Of him and his observations, it is said:

"These facts, on so high an authority as Dr. Rush,—a man in every sense justly comparable to Sydenham; equally distinguished for candor, integrity, and sagacity; and I may add, to the disgrace of humanity, equally the victim of calumny and persecution, for opinions which now constitute, I might almost say, not only their glory, but that of their respective countries,—these facts, without resorting to the testimony of other authors, sufficiently prove that yellow fever is merely a higher grade of intermittent and remittent fever, and, like them, that it arises from malaria, and is essentially distinct from the common inflammatory fever, which equally bears the name of yellow fever, but which is to be distinguished from the specific disease by the causes which produce it; by its never putting on the intermittent and remittent forms; and by the simple means which are adequate to its cure."—pp. 243, 244.

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The doctrine of identity drawn from these and similar arguments, is the chief point of discussion, which, together with the subject of the personal contagiousness of the disease, occupies the whole chapter. As we have said, these can have but little interest for our readers, and we shall therefore pass on rapidly to a conclusion; merely expressing our conviction of this identity,—as we have stated at another page,—not from any respect to external causes, but from the pathology of the different forms which referring us to one lesional origin, can admit of no other distinguishing mark than characteristic, original, and consecutive implications of organism. If we might suffer ourselves in this place to discuss the nature and agency of the causes enumerated by Dr. Boott as necessarily concurring for the production of yellow fever, we should fully express our dissent from his opinion enforced with so much confidence, but we have already given a few hints of our views and can only refer to the subject again by saying that the whole history of the form of gastro-enteric fever, so well understood by our countrymen, affords so many facts adverse to any certainty on this question, that the subject of causation still remains enveloped in doubt. We will just state our objections. 1st. If malaria be the cause,—why is it that inland situations,—where intermitting, remitting and typhus fevers so extensively prevail—are not obnoxious to this disease; or, without entering upon any discussion on this point, and conceding the affirmative of this question,—why is it of so very rare occurrence as to make it doubtful to some of the least sceptical observers? 2d. High temperature is experienced as much in the interior as on the seaboard,—and in combination with this malaria of authors, in other countries as well as in this—and yet we have here no well authenticated cases of yellow fever. 3d. The predisposition of body from a change from high to low latitudes, or from a great range of temperature from winter to summer, is often occurring with individuals at particular seasons, without any consequent attack of the disease. Besides, neither heat, nor great ranges of season temperature have,—with all our familiarity with the subject,—ever enabled any one positively to predict the occurrence of yellow fever. The possibility at every season, particularly in the Southern States and West Indies, is so great, that prophecies may run some chance of being fulfiled, but such cannot be said even under the most favorable local circumstances, ever to be the case with Baltimore, Philadelphia, or New York. That there are predispositions of body we do not doubt, but that they are produced alone from the two causes

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mentioned above we have much reason for questioning; for how then would the epidemic prevail in some of our northern cities, and prove fatal in seasons when such great ranges have not been observed particularly to occur, and to persons who for years have not been beyond the suburbs of their native towns? Malaria too cannot be a concurring cause, for in those parts of New York especially, where the epidemic has generally commenced its career, (as is the case also in all the thickly built portion of the city,) we do not believe that a case of intermitting fever ever occurred, that could not be traced to the country for its origin. If malaria then be the cause of yellow fever, it must be something different from that which produces the simple form or it must never exist in such instances in a state of dilution, and then the mode of proving the identity of the two by reasoning from a relative state of concentration falls to the ground as unsatisfactory. We say, we believe the predisposition of body to exist—but how it is produced we cannot pretend to assert. 4th The atmospherical distemperature,—means any thing or nothing; it is a very convenient expression, and popular, we suppose, from its very vagueness which at once defies any thing like an analysis of its nature. Its definition may be an equivalent with that of thunder given by an old lexicographer, "a sound which every one is acquainted with who is not deaf." A very happy mode of explanation to those who should be so unfortunate as to be in that condition.

The only facts that we do really know of the history of this fever—is its pathology—its prevalence in large sea-board towns washed by tide water—its non-contagiousness—and its local origin. On these two last points, we believe, there can now be no difference of opinion—opponents to these views are now only known as things that once were; or embalmed in their own absurdities, are remembered but in connexion with the calumnies so prolifically cast upon those pioneers of truth—the Rushes and Millers, and the host of worthies whose names will ever be mentioned with respect and admiration by the American physician.

The etiologist has therefore much left for his contemplation. For ourselves, without denying the possibility of the effects of the causes which from the time of Lancisi, have gradually been made to assume so much of the nature of undoubted existences, as to be finally honored with a scientific classification,—we have only looked upon them with, we believe, a pardonable scepticism and have expressed our doubt of the positiveness of their agency

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and the appropriateness of their use in investigations concerning the nature, symptoms and treatment of fevers. In the affection under consideration, we have admitted the existence of some pathogenic agent in confining it, as we are inclined to do,—to towns on tide-waters, but as to what that agent is, we confess our ignorance and doubt the opinions of those who profess any absoluteness of knowledge on the subject. We would therefore prefer to consider this whole class of diseases in reference only to the certainty attached to them—viz: their morbid anatomy with its whole pathological relations from the prodrome to the termination, or fatal effects of deranged physiological action.

The four remaining chapters are occupied with an extended investigation of the fevers of the Southern States—of those of the Middle States,—of those of the city and state of New York,—and, of those of the Eastern States. A mass of evidence on the history of these sectional diseases has been accumulated by Dr. Boott, which does credit to his research and entitles him to the thanks of the medical community. We indeed may be permitted to regret that the honor of collecting the immense number of facts on our fevers, scattered through our early periodicals and numberless monographs, should have been left for a physician of the British metropolis. As much indebted as we feel ourselves to be to the very able English compiler, we would have rather owed that debt of gratitude to one of our own countrymen—a confession which possibly may be considered as a rebuke. If it lead to any good, we will let it so be understood, as we have but one object in view, an elevated intellectual character of the medical men of our country.

As a collection of observations these chapters from their very nature defy any thing like an analysis. As a whole they are invaluable for reference, and offer on every page something for the consideration of the physician, who has not already made himself familiar with the facts and arguments on this subject accumulated during one of the keenest controversies that ever engaged the attention of our profession.

With one short extract we shall now close our review of Dr. Armstrong's opinions, which has imperceptibly lengthened itself far beyond our original intention. In speaking of Dr. Duvall's description of an epidemic which occurred in Fredericktown, in 1804, we find the following complimentary remark in reference to the early physicians of our country.

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"I must again repeat, that I know of no body of facts more instructive in the whole compass of medical literature, than those contained in the reports of medical men scattered through the States of North America,—men who, however imperfect their early education might have been, as compared with those who had all the advantages of the elaborate instruction of the European schools,—thrown as they necessarily were upon their own resources, in a country fertile in all the varieties of fever, and obliged to discharge *all* the duties of the profession, may be said ultimately to have been taught in the great school of nature, where the observation of her phenomena led to the best practical information, unfettered by those systems and creeds which hold such influence over the minds of men in a narrower field of observation, and limited, as in this country, to the practice of one particular branch of the profession."—pp. 391, 392.

It is this unfettered condition of our fathers that we anxiously wish to see continue and increase; as they broke from the shackles of the schools, so would we desire the physician of the present day to free himself from much that circumstances did not permit those who preceded him from casting entirely aside; systems and creeds we would have scattered upon the wind which "goeth whither we know not;" we would have the mind free as our native air, and men taught to think,—to rely on their own energies—and emancipate themselves from the influence of names and mere *ex cathedra* opinions. Credulity is most mischievous in a science like ours, where to doubt is not to merit an eternal anathema. But there is a species of credulity that we could wish to see more indulged in—a ready belief that with all its unrevealed mysteries, our science has been rapidly progressive in a healthful reformation. But we fear that there are those who like Irving's hero, have been passing an age in some Sleepy Hollow, unknowing, and unwilling to believe that a revolution has taken place, and unconscious that they stand alone—mere chroniclers of forgotten years—the Rip Van Winkles of science—the miracles of an age whose watchword is—onward!

Our opinion of the volume which Dr. Boott has given us, will have been gained in the course of our extended notice.—Nothing indeed, that we might here say could add to the popularity of Dr. Armstrong's writings, which is unsurpassed among our countrymen by that of any other British medical author. To the work itself we refer our readers for the perusal of a most interesting biography of a man, who in creating his own fame by the force of an original mind, an untiring industry and an honest expression of his convictions of truth,—became the mark of obloquy to the envious, to the dogmatist, and the

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medical dotard. In this treatment, however, there is nothing novel.

We are glad to be informed that upon the appearance of Dr. Boott's second volume, a complete edition will be issued from the American press. J. J. G.

Art. X. *On the Adaptation of External Nature to the Physical Condition of Man: principally with reference to the supply of his wants and the exercise of his intellectual faculties.* By John Kidd, M.D. F.R.S. Regius Professor of Medicine in the University of Oxford. London, 1833. Philadelphia, 1833, pp. 280, 12mo.

The Hand, its Mechanism and Vital Endowments as evincing design. By Sir Charles Bell, K.G.H. F.R.S. L.&E.—London, 1833. Philadelphia, 1833, pp. 213, 12mo.

The works, of which these are the titles, belong to what have been termed the "*Bridgewater Treatises*—on the power, wisdom, and goodness of God, as manifested in the creation," and the circumstances, which gave occasion to them and their appellation, are as follows. The Right Honorable and Reverend Francis Henry, Earl of Bridgewater, who died in 1829, directed, in his will, certain trustees to invest in the public funds the sum of eight thousand pounds sterling; this sum, with the dividends accruing thereon, to be held at the disposal of the President, for the time being, of the Royal Society of London, to be paid to the person or persons nominated by him. The testator further directed, that the persons, selected by the President, should be appointed to write and publish one thousand copies of a work—"on the power, wisdom, and goodness of God, as manifested in the creation: illustrating such work by all reasonable arguments, as for instance, the variety and formation of God's creatures in the animal, vegetable, and mineral kingdoms; the effect of digestion, and thereby of conversion; the construction of the hand of man, and an infinite variety of other arguments; as also by discoveries, ancient and modern, in arts, sciences, and the whole extent of literature." He desired, moreover, that the profits arising from the sale of the works, should be paid to the authors of the works.

In determining upon the best mode of carrying into effect this testamentary request, the late President of the Royal Society, Davies Gilbert, Esq. asked the assistance of the Archbishop of Canterbury, and of the Bishop of London, with the aid of

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whose advice, and the concurrence of a nobleman, immediately connected with the deceased Earl, the subjects of the works at the head of this article were chosen, amongst others not connected with the science of medicine,—if we except a treatise "On Animal and Vegetable Physiology," by Dr. P. M. Roget, and another "On Chemistry, Meteorology, and the function of Digestion," by Dr. W. Prout, neither of which has appeared.

The benevolent testator doubtless thought, that he was best serving the cause of religion and science by the disposition thus directed by him; and, although the search into final causes is peculiarly difficult, and perhaps somewhat unprofitable, we must confess we anticipated more ability, instruction, and interest, than we have met with, in treatises, so piously suggested, and so well remunerated, proceeding too as they have done from persons well known to fame; one of whom, Sir Charles Bell, has been long engaged in such undertakings, is a practiced writer, and has enjoyed the highest reputation as a scientific physiologist; whilst the situation, filled by another, in a celebrated University—one of the most so in Great Britain or in the world, but not for its medical lore and opportunities—seemed the harbinger of much useful and erudite labor.

"So far back," says Sir Charles Bell, "as the year 1813, the late excellent vicar of Kensington, Mr. Rennell, attended the author's lectures, and found him engaged in maintaining the principles of the English school of Physiology, and in exposing the futility of the opinions of those French philosophers and physiologists, who represented life as the mere physical result of certain combinations and actions of parts, by them termed organization.

"That gentleman thought that the subject admitted of an argument which it became him to use, in his office of "Christian Advocate."* This will show the reader that the sentiments and the views, which a sense of duty to the young men about him induced the author to deliver, and which Mr. Rennell heard only by accident, arose naturally out of those studies.

"It was at the desire of the Lord Chancellor that the author wrote the essay on "Animal Mechanics;" and it was probably from a belief that the author felt the importance of the subjects touched upon in that essay, that his lordship was led to do him the further honor of asking him to join with him in illustrating the "Natural Theology" of Dr. Paley.

"That request was especially important, as showing, that the conclusions to which the author had arrived, were not the peculiar or accidental suggestions of professional feeling, nor of solitary study, which is so apt to lead to enthusiasm, but that the powerful and masculine mind of Lord Brougham was directed to the same object: that he, who in early life was distinguished for his successful prosecution of science, and who has never forgotten her interests

* An office in the University of Cambridge.

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amidst the most arduous and active duties of his high station, encouraged and partook of these sentiments.

"Thus, from at first maintaining that design and benevolence were every where visible in the natural world, circumstances have gradually drawn the author to support these opinions more ostentatiously and elaborately than was his original wish."—p. 11.

With both these treatises we have been, on the whole, disappointed. The work of Dr. Kidd contains but few novel ideas, mixed up with a large amount of common place: whilst that of Sir Charles Bell, beautiful as it is in its graphic illustrations, is as well fitted to illustrate the mechanism of the horse's shoulder, or almost any common topic of natural history, as that of the hand.

In the fulfilment of the task allotted him, Dr. Kidd separates it into two parts; in the first of which he investigates and describes the *Physical Condition of Man:* in the second, the *Adaptation of External Nature to that condition.*

Under the former head, he commences, like all physiologists and naturalists, and some writers on subjects not much connected with those departments of science, with the difference between inorganic and organized bodies, and between the subdivisions of the latter—plants and animals; but his points of discrimination, although in the main satisfactory, are not more novel in their nature or mode of elucidation than his conclusion, that "of all the kingdoms of nature, the individuals of the animal kingdom have the most extensive and important relations to the surrounding universe," and "that if, among the kingdoms of nature, animals hold the first rank, in consequence of the importance of these relations, among animals themselves the first rank must be assigned to man." p. 18.

Man it is well known, when first ushered into existence, is more helpless than the young of any part of the creation. His actions are almost wholly instinctive, and these few in number. He is unable to move about to search after nutriment. He is unable, immediately after birth, to elicit heat enough to resist the atmospheric cold, even in seasons by no means inclement. He resembles, in this respect, the cold rather than the warm blooded animal, and demands the fostering care of the mother, not only to supply him regularly with the milk of her bosom, but also by the application of external warmth, to aid the powers of calorification, until they have acquired such activity that the infant is in this respect comparatively independent of her. Long after this, however, the dependence on the parent for nutriment continues, and were this cut off, death, in the

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infant's state of helplessness, must necessarily follow. Although professing to be extremely ignorant of final causes, and but little disposed to investigate them, it appears to us, that fewer objections could be urged against the author's suggestions on this topic than on many others of the kind. "Is it not indeed, obvious on a moment's reflection," he remarks, "that the very helplessness and imperfect state of the physical powers in infancy, so ill understood, and appreciated, though so beautifully described by Lucretius, contribute to the fuller development of the moral character, not only of the individual, but of his parents also, and of all his immediate connexions. The mutual affection, for instance, that takes place, and is cemented between the infant and its mother, during the lengthened period, in which the latter nurses her offspring; the stimulus, which is given to the other parent in supplying the increasing wants of those who depend on him for support; and the general feeling and expression of good will, and attachment, which bind together the numerous individuals of the same family; all coincide to increase the sum of human happiness and virtue. Whereas, were the infant born with all its powers complete, and capable of exerting those powers as soon as born, independently of the assistance of parent, or sister, or brother; what would then remain of those endearing relations, but the empty name?" p. 25.

In referring to the opinions of those *soi-disant* philosophers, who have asserted that the ape and man are but varieties of the same species, or at most but different species of the same genus, and to the unnecessary anxiety of those who have labored to vindicate the supposed insult, thus offered to human nature, by searching for some fixed and invariable difference in the structure of corresponding parts of each, Dr. Kidd properly remarks, that the question is puerile; for even if we were to suppose, that the whole and every part of the structure of the ape, were the same as that of man,—even the brain itself,—unless in its functions it resembled that of man, in other words "unless there were associated with it his intellectual peculiarities, and the moral and religious sense, to what dreaded conclusion would the closest resemblances lead? However near the approximation in their form, in their nature, there must ever be an immeasurable distance between the two. The ape, compared with man, may indeed be among other animals "proximus huic;" still, however, it must be added, "longo sed proximus intervallo." p. 28.

The third chapter of the work is on the powers of the human

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hand, considered as a corporeal organ, although this subject was expressly assigned to Sir Charles Bell. Dr. Kidd's object, however, appears to have been simply to give the views of Galen on the "instrument of instruments," which he has accordingly done *verbatim;* and this has assisted him in eking out the quantity of matter, necessary for the treatise. We cannot, at least, readily divine any other reason for its admission. It is somewhat amusing, after having read the dissertation of Sir Charles Bell on the hand, to find Dr. Kidd remark, that "it would be an invasion of the province of others to give an anatomical description of the several constituent parts of the human hand;" yet, strange to say, this is passed over by Sir Charles, although it would seem to form with propriety the chief subject matter of his treatise.

In speaking of instinct, Dr. Kidd says he purposely avoids a formal definition of the term; for any attempt to define with accuracy a principle, of the real nature of which we are ignorant, usually leaves us in a state of greater darkness than we were before: of which the following extraordinary attempt, with reference to the very principle, now under consideration, is a sufficient illustration. It is quoted from an author of the name of Wagner, in a work on the Brain of Man and other animals, written by Wenzel, and his brother; and is as follows: "The instinct of animals are nothing more than inert or passive attractions, derived from the power of sensation; and the instinctive operations of animals, nothing more than crystallizations produced through the agency of that power." p. 45.

It is true, that of this instinctive property we know no more than we do of the principle of life, of which it is one of the manifestations. It is equally inscrutable with light, caloric, electricity or magnetism, or with the mode of existence of the immaterial principle within us, which gives rise to the mental phenomena. We see it only in its results; but they are, in many cases, as unequivocal as those produced by the imponderable agents just mentioned. All, perhaps, that we can say is, with Dr. J. M. Good, that instinct is the operation of the principle of organized life, by the exertion of certain *natural* powers, directed to the present or future good of the individual, whilst reason is the operation of the principle of intellectual life, by the exercise of certain *acquired* powers directed to the same object; that the former belongs to the whole organized mass, as gravitation does to the whole unorganized; actuating alike the smallest and the largest portions—the minutest particles, and the bulkiest systems;

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and every organ, and every part of every organ, whether solid or fluid so long as it continues to live; that, like gravitation, it exhibits, under particular circumstances, different modifications, different powers, and different effects; but that like gravitation, too, it is subject to its own laws, to which, under definite circumstances, it adheres without the slightest deviation; and that its sole and uniform aim, whether acting generally or locally, is that of health, preservation, or reproduction. In this view, *reason* requires discipline, and attains maturity; *instinct*, on the contrary, neither requires the one, nor is capable of attaining the other. It is mature from the first, and equally so in the infant as in the adult.

The favorers of phrenology will not be satisfied with the notice the author has taken of Gall's craniological system; but the large mass of intelligent observers, who regard the foundation of the system to be philosophical, and the superstructure faulty, will accord with all his sentiments. After properly observing, that the "system" has been injured fully as much by its injudicious friends, as by its professed enemies, he proceeds:

"Of this theory it may perhaps be affirmed with truth, that, considered as an abstract philosophical speculation, it is highly ingenious, and founded upon unobjectionable principles; and that while the general conclusion is inevitable with respect to the collective functions of the brain, there is nothing unreasonable in supposing that specific parts serve specific purposes. The rock on which Dr. Gall and his implicit advocates have split, is the attempt to fix the local boundaries of the several faculties of the soul. Had he satisfied himself with developing the structure of the brain in the various classes of animals; and had he been content to show that, in tracing its structure from those animals which manifest the least indications of intelligence to those which exhibit still stronger and stronger, it proportionally advances in its resemblance to the structure of the human; and lastly, had he only drawn from these premises the general probable conclusion, that specific parts had specific uses with respect to the manifestations of the immaterial principle of animal existence; (and assuredly brutes are endued with such a principle, though, as being devoid of the moral sense, they are not fitted for a future state, and consequently perish when their bodies die;) had Dr. Gall been content to have stopped at this point, without venturing to define the local habitations of the supposed specific organs, he would have acquired the unalloyed fame of having developed a beautiful train of inductive reasoning in one of the most interesting provinces of speculative philosophy: whereas, in the extent to which he has carried his principles, his doctrine has become ridiculous as a system; while in its individual applications it is not only useless, but of a positively mischievous tendency: for without the aid of this system, every man of common sense has sufficient grounds on which to judge of the characters of those with whom he associates; and it is evidently more safe to judge of others by their words and actions, and the general tenor of their conduct, than to run the risk of condemning an individual from the indication of some organ, the activity

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of which, for a moment allowing its existence, may have been subdued by the operation of moral or religious motives.

"But there is an occasional absurdity in the application of the theory, which, though obvious, does not seem to have been noticed. Let us suppose, for instance, the case of a *murderer;* and that a disciple of Dr. Gall were to maintain that, as the crime of murder proceeds from the operation of the organ of destructiveness, that organ would be found highly developed in such an individual; and yet, upon actual inspection, this were not found to be the case. Here, although the disciple of Dr. Gall might be disappointed in finding no such development, a plain reasoner would not be so disappointed: for is it not obvious that *avarice,* or *shame,* or *jealousy,* might in a moment operate so powerfully as to lead an individual to the crime of murder, whose nature and habits were as far as possible removed from the propensity to that crime; and who, consequently, according to Dr. Gall's own principles would be devoid of any undue development of the organ of murder.

"With respect to ourselves, indeed, the study of the system may be attended sometimes with the happiest consequences: for if, from the contemplation of it, we can be strengthened in our conviction of the fact, which both reason and revelation teach us, that each individual is liable to particular temptations depending on his specific temperament, we shall thus have one additional memento of our frailty, one additional incentive to watch over, and combat 'the sin which doth so easily beset us.'"

The following remarks on the same subject are judicious and apposite:

"As the indiscreet zeal, not only of Dr. Gall, but of physiognomists in general, has thrown unmerited discredit on that department of speculative philosophy which they have cultivated, it may be worth while to examine the subject on other authority than that of professed physiognomists.

"There are many phenomena, then, connected with the moral and intellectual faculties of man, both in a healthy and diseased state, which, by showing the reciprocal influence of the two distinct parts of our nature, the soul and the body, render it probable that the energies of the former, although it be itself immaterial, may be manifested by means of a material instrument. The existence of this reciprocal influence, which indeed we might expect from their intimate though mysterious union, cannot be denied. Thus grief or expectation destroys appetite; and mental application to any favorite pursuit makes us insensible of the want of food: and, on the other hand, a disordered state of the digestive organs, evidently impedes the free exercise of the mental powers; or oppresses the soul with those dreadful, though really groundless apprehensions which have been termed *hypochondriacal,* from the situation of the organs, the morbid state of which is supposed to give rise to those apprehensions. Again, intoxication confuses the memory and judgment; and the repeated abuse of wine permanently debilitates the mind, and often terminates in confirmed insanity. The state of the air affects the mental energies and moral feelings of many individuals, to a degree inconceivable to those who are not thus subject to its influence. And the impression of fear has been known suddenly to arrest the symptoms of endemic ague and epilepsy.

"The general idea that this connexion of the soul and body may be traced in the conformation of the latter, it will be at once remembered, is by no means new: and the anecdote of the unfavorable judgment passed on the

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moral disposition of Socrates, from the character of his countenance, will readily recur to the mind on this occasion. Aristotle has even entered into some details on the forms and shades of color of the hair and features, and indeed of various other parts of the body, as indicative of particular temperaments or constitutions of the mind. And it is hardly a question, whether every individual is not accustomed, in some degree, to decide on character from the features, the color of the hair, and other external indications, independently of that expression of the countenance, which rather marks the actually existing state of the mind than the latent disposition of it. But if it be in any degree probable that the connexion between the soul and body may be traced in the conformation of the features or other parts of the body, in a much greater must it be probable that that connexion may be traced in the structure of the brain.

"Nor does there appear, on the ground either of reason or of religion, any thing objectionable or absurd in the assumption, antecedently to observation, that the intellectual and moral tendencies of the soul may in a qualified sense be determined, or at least modified, by the peculiar structure of the body: that they are frequently coincident with certain peculiarities of corporeal structure is a matter of actual observation.

"Is it absurd to suppose that, man being a compound of soul and body, the body has been so constructed in each individual as to become a fit arena on which that struggle shall be manifested, which undoubtedly takes place between the conflicting passions of the soul? For it will not be denied by those to whom this treatise is addressed, that the soul wants not the substance of a corporeal frame for the mere existence of its evil principles, but only for the external manifestation of them. An authority at least which cannot be questioned by a believer in revelation, asserts that out of the heart, that is, evidently from the context, out of the soul, proceed murder, theft, adultery, and the like.

"Is it absurd to suppose that, the brain being a very complicated organ, made up of distinctly different parts, these parts are subservient to the exercise of different functions? or, since it is evident that in every other individual organ of the body, where there is an identity of structure, there is also an identity of function in all the parts, may we not fairly presume that, were the integral parts different, the effects produced would be different; and, consequently, that as the integral parts of the brain differ from each other, the offices of those parts may be different? Or, again, will it be denied as a matter of fact that different faculties and propensities manifest themselves in different individuals; and is it unreasonable, on the ground of analogy, our only ground in this case, to suppose that they manifest themselves through the agency of different instruments? And since the visceral nerves are appropriated to the mere vital functions of nutrition; and the spinal nerves to general muscular motion and common sensation; and the nerves of the special senses occupy but a very small portion of the brain; to what assignable purpose can the great mass of that organ be applied, if not to the operations of that intellectual and moral principle, which, after the abstraction of the organs of nutrition, motion, and sensation, is the only imaginable part of our present nature?

"Is the language of scripture entirely allegorical throughout the sacred volume? or do we believe on just grounds that we are contaminated with an innate propensity to evil; that there are two principles within us constantly struggling for the mastery; and that, spite of our better part, and against the

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strongest feelings of conscience and determination of judgment, we still are forever yielding to the worse?

"Shall we deny that the tendencies to evil are different in character in different individuals; and by that denial shall we attempt to falsify the testimony of experience as to the fact itself; and the conclusions of antecedent reasoning as to its probability: for, if all men were avaricious, for instance, or ambitious in the same points, where would be the field for the display of other qualities; and how could the affairs of the world be conducted?

"But whatever may be the real state of the case—whether the brain act as a simple organ by the simultaneous operation of all its parts; or whether those parts act independently in the production of specific effects—no one can doubt that the organ itself is the mysterious instrument by means of which, principally, if not exclusively, a communication is maintained between the external world and the soul. Nor can it be doubted, indeed it is a matter of fact which is constantly open to our observation, that the degree of approximation in the structure of the brain of other animals to that of man bears a very obvious relation to the degree of intelligence manifested by the various classes of animals: so that, in just reasoning, it must on every consideration be admittted to be the instrument by which the various degrees of intelligence are manifested.

"It is a matter of observation, that the powers of the mind are capable, like those of the body, of being strengthened by exercise and cultivation: and further, that not only do the mental faculties gradually manifest themselves from the moment of birth onwards; but that the physical development of the brain advances proportionally up to a certain period. But on this point it will be desirable to make a few more particular remarks."

The conclusion at which Dr. Kidd arrives, from the whole of his investigation into the physical condition of man, is, that it is highly probable, both from the intuitive conviction of mankind at large, and from a comparative examination of the structure and development of the brain in man, and other animals, that the intellectual superiority of man, physically considered, depends on the peculiarities of the human brain; and that with respect to the rest of his body, it is certain, that the hand is the instrument which gives him that decided physical superiority, which he possesses over all animals. "In all other respects, there is no physiological difference, of any importance at least to the present argument, between man and the higher orders of animals; and the peculiarities of his physical condition, with reference to the form and general powers of his body, rest therefore on those two organs, the *hand*, and the *brain*."

The second division of the author's subject, the adaptation of external nature to the physical condition of man, embraces numerous topics which it is impossible for us to examine in detail. In different chapters, he inquires into the adaptation of the atmosphere, minerals, vegetables, animals, &c.; but in many of

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these he has offered no new views and but few facts that are not known to the well instructed physician or naturalist.

In alluding to the effects of privation of light, in destroying all the native beauties, and uses of a vegetable growing under these circumstances; depriving it of all variety and brightness of color, and of fragrance; causing the fibre to degenerate into a mere pulp unfit for any mechanical purpose, and arresting the development of the resinous and other principles, on which its nutritive and medical virtues are dependent; we are somewhat surprised, that Dr. Kidd should not have drawn attention to the singular facts, connected with the privation of light on the development of the animal body, as exhibited in the researches of Dr. Edwards of Paris more especially.

That distinguished observer found that the tadpole does not undergo its due conversion into the frog, if it is kept in obscurity, and he thinks it probable, that the privation or deficiency of light may give occasion, with other causes, to the deviations in form, observed in the children of confined and dark situations, as in the extensive manufacturing establishments in some of the large towns of Great Britain.

The kind of "etiolation" or blanching, which we observe in the vegetable, is witnessed also in man, especially in such as pass their lives in dark places, as in mines. The inhabitants of a crowded city may, in this way, be distinguished from those of the country.

The tenth chapter of the work comprises some singularly inappropriate disquisitions, as it appears to us, on the rise and progress of knowledge; the opinions of Lucretius on the constitution of matter in general, and on the nature of light, heat, water and air; the opinions of the ancients on the organization and classification of animals; and on those animal forms called monsters or Lusus Naturæ; which occupy no less than forty-six pages of the American edition. A good deal—the greatest portion—of this affords the author an opportunity for exhibiting his acquaintance with the classical lore, which is held in such overweening estimation in the university to which he is attached, to the exclusion even of far more important topics of study. In these venerable seminaries of learning, innovations are strenuously resisted, and many of the prominent subjects of learning have become so by prescription, having been handed down from the monkish periods, when all knowledge was enwrapped in the dead languages, when the vernacular was rarely employed in scientific treatises by any of the nations of Europe, and

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when, of consequence, the dead languages became of greater importance to the scientific than the living. It is not many years since the habit of examining licentiates in the Latin language, for practising physic, was maintained in all the universities of Europe. Some have succeeded in abolishing this relic of antiquity; but in most, the diplomas in the different faculties are composed in Latin, and that often of the most miserable kitchen kind. One university of this continent, the University of Virginia, has ventured to break in upon this venerable custom. Its diploma is of the most simple form, and is couched in English as follows:—

University of Virginia.

Mr. *has this day been declared a* GRADUATE *in the school of medicine of this* **University.**

—— —— *Chairman of the Faculty.*

—— —— *Professor.*

—— —— *Secretary of the Faculty.*

The following remarks of Dr. Kidd, on the final cause of monsters or Lusus Naturæ, we think feeble and unsatisfactory. They signally exhibit the folly of the search after such causes, in cases necessarily involved in impenetrable obscurity, and when every suggestion must be purely hypothetical.

"The term *lusus naturæ* is applied to those natural productions, which vary in any remarkable degree, with respect to form, color, structure, size, &c. from the general character of the individuals of the same species. The term literally taken, implies a sportive effort of the creative power of nature; and for the purpose of general description there is no objection to this term, being, as it now is, familiarized by long continued use. But as we have no ground for supposing that nature, or, to use the more proper expression, that the providence of the Creator ever acts without some wise and beneficent purpose, we must consider the term in a philosophical point of view, as expressing an effect, of the natural cause of which we are ignorant.

"What, then, is the real character of those unusual productions which are denominated *lusus naturæ*, or *monsters;* or, in other words, for what end has Providence ordained that such productions should be formed and subjected to our observation? And here, as has been observed in another part of this treatise, it will be found, upon even a cursory examination, that in a *lusus naturæ* the character of the species, however obscured, is never lost. There is no ground, in short, for supposing that nature has ever produced such an individual as a chimera or centaur. And Lucretius' scepticism in this point is justified on truly philosophical principles; on the difference namely of the physical constitution of the horse and of man: the horse at the end of his third year being full grown, while man is yet almost an infant; and the horse being decrepit in his twenty-fifth or thirtieth year, when man is in his full vigor.

"In pursuing this investigation, it would be obvious to ask, what are the limits which separate a *lusus naturæ* from the ordinary individuals of the same

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species? and we shall soon find that these limits are, in the majority of instances, undefinable.

"If, indeed, in comparing the several organs, agreement with respect to number be the criterion, the limits are for the most part fixed. Thus the human hand so very generally consists of five fingers, that an instance of an individual having more or less than five fingers would be justly esteemed an instance of a *lusus naturæ*. But even number is not always an acknowledged criterion; for, with respect to the teeth, though thirty-two is the usual number in the human subject, yet the instances of persons having only twenty-eight are so frequent, that we can scarcely class them as deviations from the common law.

"But if size, or color, or form be made the criterion, we evidently cannot then fix the limits; for in all these points there is an endless variety in individuals of the same species: so that it might perhaps be truly asserted, that out of the countless myriads of human beings that inhabit the earth, nay even out of all that have existed since the creation, no two individuals would be found to resemble each other, exactly, in even any one of those points. And in this wonderful diversity the infinite power of the Deity is distinctly manifested: for, in the exercise of human skill, the most accomplished artist, as soon as he ceases to copy an actual individual, falls into that general similarity of outline by which we are enabled to ascertain his style upon the first view.

"If, in the pursuit of our inquiry, we appeal to the distribution of the internal organs of the body, we shall find, that though with respect to many the position is determinable with considerable precision, yet with respect to others, the smaller veins and arteries for instance, the variation is endless. But—and this most highly deserves our attention—if we consider the *uses* of the parts with reference to the precision of their position, we shall find, that the position of those is most constant, the uses of which are most important; while the distribution of those parts, the position of which may differ to a considerable extent without inconvenience to the individual, is found to be continually varying.

"Now as this law of deviation from the usual structure does not seem at all to depend on the construction of the parts themselves; and as the result is necessarily connected with the well-being, and even the life, possibly, of the individual; we cannot consider this result as the effect of chance, or want of design: for, if chance could be admissible as the cause, why should one class of phenomena be so much more frequent than the other? And with equal or still greater force we may apply the argument to the existence of those productions emphatically called *monsters*. Probably, then, or rather assuredly, these anomalous productions may, in addition to other ends, be considered as proofs of a particular or constantly superintending Providence; and, like the storms which occasionally ravage the surface of the earth, may awfully recall to our minds the power of the Deity, while they at the same time convince us, by the rarity of their occurrence, of the merciful beneficence of his nature."

Lastly, twenty-three closely printed pages of the American edition are devoted to an appendix, exhibiting a comparative view of the observations of Aristotle and Cuvier on some points connected with the general physiology of animals, presented in parallel columns, from which the author infers, that with

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respect to those points in the history of animals, the knowledge of which was equally accessible to both writers, the descriptions of Aristotle are hardly inferior in accuracy to those of Cuvier. Nor does this observation hold with reference to the more common animals only: "It is equally remarkable with reference to those which are of comparative rarity, in support of which assertion, I would refer, among other instances, to the description of the sepia and of the chameleon, and of the evolution of the egg of the bird during incubation." This, however, is not singular; the specific differences between animals have been at all times such as they now are, and accordingly the purely descriptive parts of natural science could be as accurately given in the time of Aristotle as in that of Cuvier.

The treatise of Sir Charles Bell, emphatically designated "the hand, its mechanism and vital endowments," is so heterogenous in its character, and so little confined to the subject it professes to treat, as to render all attemps at analysis futile. The *programme* of his subject, as laid down in the introductory chapter, will sufficiently exhibit how wide is the ground over which he has travelled.

"In the following essay, I shall take up the subject comparatively, and exhibit a view of the bones of the arm, descending from the human hand to the fin of the fish. I shall, in the next place, review the actions of the muscles of the arm and hand; then proceeding to the vital properties, I shall advance to the subject of sensibility, leading to that of touch; afterwards, I shall shew the necessity of combining the muscular action with the exercise of the senses, and especially with that of touch, to constitute in the hand what has been called the geometrical sense. I shall describe the organ of touch, the cuticle and skin, and arrange the nerves of the hand according to their functions. I shall then inquire into the correspondence between the capacities and endowments of the mind, in comparison with the external organs, and more especially with the properties of the hand; and conclude by showing that animals have been created with a reference to the globe they inhabit; that all their endowments and various organization bear a relation to their state of existence, and to the elements around them; but there is a plan universal, extending through all animated nature, and which has prevailed in the earliest condition of the world; and that finally, in the most minute or most comprehensive study of those things we every where see prospective design." p. 15.

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All this Sir Charles has attempted, and generally successfully, but a great deal of it might obviously have formed part of any other treatise, as well as of one on the hand, which organ has, indeed, met with no little neglect from the author. He appears, on almost all occasions, to avoid naming it, or if the thought obtrudes, he dismisses it as speedily as possible, and flies off to some topic of natural science.

On the question of the superiority of the right hand over the left Sir Charles offers the following views:

"In speaking of the arteries which go to the hand, it may be expected that we should touch on a subject, which has been formerly a good deal discussed, whether the properties of the right hand, in comparison with those of the left, depend on the course of the arteries to it. It is affirmed, that the trunk of the artery going to the right arm, passes off from the heart so as to admit the blood directly and more forcibly into the small vessels of the arm. This is assigning a cause which is unequal to the effect, and presenting, altogether, too confined a view of the subject: it is a participation in the common error of seeking in the mechanism the cause of phenomena which have a deeper source.

"For the conveniences of life, and to make us prompt and dexterous, it is pretty evident that there ought to be no hesitation which hand is to be used, or which foot is to be put forward; nor is there, in fact, any such indecision. Is this taught, or have we this readiness given to us by nature? It must be observed, at the same time, that there is a distinction in the whole right side of the body, and that the left side is not only the weaker, in regard to muscular strength, but also in its vital or constitutional properties. The development of the organs of action and motion is greatest upon the right side, as may at any time be ascertained by measurement, or the testimony of the tailor or shoemaker; certainly, this superiority may be said to result from the more frequent exertion of the right hand; but the peculiarity extends to the constitution also; and disease attacks the left extremities more frequently than the right. In opera dancers, we may see that the most difficult feats are performed by the right foot. But their preparatory exercises better evince the natural weakness of the left limb, since these performers are made to give double practice to it, in order to avoid awkwardness in the public exhibition; for if these exercises be neglected, an ungraceful preference will be given to the right side. In walking behind a person, it is very seldom that we see an equalized motion of the body; and if we look to the left foot, we shall find that the tread is not so firm upon it, that the toe is not so much turned out as in the right, and that a greater push is made with it. From the peculiar form of woman, and the elasticity of her step resulting more from the motion of the ankle than of the haunches, the defect of the left foot, when it exists, is more apparent in her gait. No boy hops upon his left foot, unless he be left handed. The horseman puts the left foot in the stirrup, and springs from the right. We think we may conclude, that every thing being adapted in the conveniences of life to the right hand as, for example, the direction of the worm of the screw or of the cutting end of the auger, is not arbitrary, but is related to a natural endowment of the body. He who is left handed is most sensible to the advantages of this adaptation, from the opening of the parlour door to the opening of a pen-knife. On the whole, the preference of the right

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hand is not the effect of habit, but is a natural provision, and is bestowed for a very obvious purpose: and the property does not depend on the peculiar distribution of the arteries of the arm—but the preference is given to the right foot, as well as to the right hand."

In the chapter "of sensibility and touch," Sir Charles has the untenable assumption, that surgeons have advanced the study of physiology more than physicians; and the strange reason he suggests for this fancied fact is, "that they become practically acquainted with the phenomena on which the science is founded." But even if we were to admit the fact, we do not see how the inference could be established. We deny, however, the position in toto. This may have, and has, happened in England, but it has not been because the physiologists were surgeons, but because they were *anatomists;* most of the distinguished teachers of anatomy, at all times, in the British Metropolis, having been surgeons. The remark will apply no where else, and not there universally. Confining ourselves to the more recent observers, we find, that neither Bostock, nor Magendie, nor Adelon, nor Tiedemann, nor Rudolphi, nor Martini, nor Burdach, nor Rolando, nor Hempel, nor Lenhossek, nor Walther, nor Dumas, nor Blumenbach, nor Broussais was distinguished as a surgeon; and some, most of them, indeed, did not even practice it. Richerand is one of the few physiological writers of France whose studies and practice have extended largely in that direction; but his case is an exception to a rule, which might be established, of a nature exactly contrary to that laid down by our author. To Sir Charles himself, physiological science is largely indebted; not, however, because he is and has been a surgeon, but because he is a cultivator and teacher of anatomy, which is the ground-work of all physiology.

It is an old notion to ascribe the superiority of man over animals, and his pre-eminence in the universe to the hand. Anaxagoras asserted, and Helvetius revived the idea, "that man is the wisest of animals because he possesses hands." Buffon assigned so much importance to the sense of touch, that he believed the cause, why one person has more intellect than another, is his having made a more prompt and repeated use of his hands from early infancy. Hence he recommends, that infants should be permitted to use them freely from the moment of birth.

The hand, however, can only be regarded as an instrument by which information of particular kinds is conveyed to the brain, and by which other functions are executed under the di-

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rection of the will; and such is the conclusion to which the author arrives. "We have seen," he remarks, "that the system of bones, muscles and nerves of this extremity, is suited to every form and condition of vertebrated animals; and we must confess, that it is in the human hand, that we have the consummation of all perfection as an instrument. This, we perceive, consists in its power, which is a combination of strength with variety and extent of motion; we see it in the forms, relations and sensibility of the fingers and thumb; in the provisions for holding, pulling, spinning, weaving and constructing, properties which may be found in other animals, but which are combined to form this more perfect instrument. In these provisions the instrument corresponds with the superior mental capacities, the hand being capable of executing whatever man's ingenuity suggests. Nevertheless, the possession of the ready instrument is not the cause of the superiority of man, nor is its aptness the measure of his attainments. So that we rather say with Galen, that man had hands given to him because he was the wisest creature, than ascribe his superiority and knowledge to the use of his hands." p. 207.

We add the following observations by Sir Charles, which are a continuation of the last quotation, not because we consider that they elucidate the question involved in the preceding extract, for which purpose he has introduced them, but because they contain some judicious remarks and examples, in addition to the many we possess, elucidative of animal instinct.

"This question,"—the question of the pre-eminence of the hand, we presume,—"has arisen from observing the perfect correspondence between the propensities of animals and their forms and outward organization. When we see a heron standing by the water side, still as a gray stone, and hardly distinguishable from it, we may ascribe this habit to the acquired use of its feet, constructed for wading, and to its long bill and flexible neck; for the neck and bill are as much suited to its wants as the lister is to the fisherman. But there is nothing in the configuration of the black bear particularly adapted to catch fish; yet he will sit on his hinder extremities by the side of a stream, in the morning or evening, like a practised fisher; there he will watch, so motionless as to deceive the eye of the Indian, who mistakes him for the burnt trunk of a tree; and with his fore paw he will seize a fish with incredible celerity. The exterior organ is not, in this instance, the cause of the habit or of the propensity; and if we see the animal in possession of the instinct without the appropriate organ, we can the more readily believe that, in other examples, the habit exists with the instrument, although not through it.

"The canine teeth are not given without the carnivorous appetite, nor is the necessity of living by carnage joined to a timid disposition; but boldness and fierceness, as well as cunning, belong to the animal with retractile claws

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and sharp teeth, and which prey on living animals.* On the other hand, the timid vegetable feeder has not his propensities produced by the erect ears and prominent eyes: though his disposition corresponds with them in his suspiciousness and timidity. The boldness of the bison or buffalo may be as great as that of the lion; but the impulse is different—there is a direction given to him by instinct to strike with his horns: and he will so push whether he has horns or not. 'The young calf will butt against you before he has horns,' says Galen: and the Scotch song has it 'the putting cow is ay a doddy,' that is, the humble cow (*inermis*) although wanting horns, is always the most mischievous. When that noble animal, the Brahmin bull, of the Zoological Gardens, first put his hoof on the sod and smelt the fresh grass after his voyage, placid and easily managed before, he became excited, plunged, and struck his horns into the earth, and ploughed up the ground on alternate sides, with a very remarkable precision. This was his dangerous play; just as the dog, in his gambols, worries and fights: or the cat, though pleased, puts out its claws. It would, indeed, be strange, where all else is perfect, if the instinctive character or disposition of the animal were at variance with its arms or instruments.

"But the idea may still be entertained that the accidental use of the organ may conduce to its more frequent exercise, and to the production of a corresponding disposition. Such an hypothesis would not explain the facts. The late Sir Joseph Banks, in his evening conversations, told us that he had seen, what many perhaps have seen, a chicken catch at a fly while the shell stuck to its tail. Sir Humphry Davy relates that a friend of his having discovered, under the burning sand of Ceylon, the eggs of the alligator, he had the curiosity to break one of them, when a young alligator came forth, perfect in its motions and in its passions; for although hatched under the influence of the sunbeams in the burning sand, it made towards the water, its proper element: when hindered, it assumed a threatening aspect, and bit the stick presented to it. As propensities to certain motions are implanted in animals, to which their external organs are subservient, so are passions given as the means of defence or of obtaining food. But this has been well said seventeen hundred years ago. 'Take,' says Galen, 'three eggs, one of an eagle, another of a goose, and a third of a viper; and place them favorably for hatching. When the shells are broken, the eaglet and the gosling will attempt to fly; while the young of the viper will coil and twist along the ground. If the experiment be protracted to a later period, the eagle will soar to the highest regions of the air, the goose betake itself to the marshy pool, and the viper will bury itself in the ground.'"

We cannot attempt to follow Sir Charles farther. The work is indeed a complete *pot pourri*, or rather a series of pegs on which to hang the various notions of the author, and of others, on many points of animal physiology, almost all of which are canvassed in his treatise on the anatomy and physiology of the human body. In proof of the discursive views he has taken, we may remark, that in the last fifty-four pages of the English edition,

* "In some of the quadrumana, the canine teeth are as long and sharp as those of the tiger—but they are in them only instruments of defence, and have no relation to the appetite, or mode of digestion, or internal organization."

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under the head of "Additional Illustrations;" are considered;—the mechanical properties of the solid structure of the animal body; the mechanical properties in bone or in the true skeleton; the muscular and elastic forces; a comparison of the eye with the hand; the motion of the eye considered in regard to the effect of shade and colour in a picture;—and all this in a work, which was to have been devoted to the *mechanism* or, as the testator says, "*construction*" *of the hand*, and its vital endowments as evincing design. We have no fault to find with the mode in which Sir Charles has treated these interesting points of anatomy and physiology, but we must regard their introduction into a work of this nature as altogether inapposite. R. D.

ART. XI.—*Traité de la Vaccine et des Eruptions Varioleuses ou Varioliformes.* Par M. J. B. BOUSQUET, Chevalier de la Legion d'Honneur, &c. &c. pp. 363, Paris, 1833.

Treatise on Vaccination, and on the Variolous or Varioloid Eruptions. By J. B. BOUSQUET, &c.

THE prophylactic power of the vaccine disease against variola, although first brought before the world by Jenner, in his publication of 1798, yet appears to have been known long before among the common people in Gloucestershire, and in some parts of Ireland. A similar tradition has been said to exist in Persia and the East Indies. Humboldt, also, in his political essay on the kingdom of New Spain, mentions that the country people among the Peruvian Andes had long been aware that those engaged in milking cows, occasionally take a peculiar disease from that animal, and that such persons are exempt from small-pox. He likewise states that Anton Valmis, physician general to the expedition sent out in 1803, by the Spanish government, to convey the benefits of vaccination to their possessions in America, succeeded in finding the disease on the udders of the Mexican cows. This author does not, however, as M. Bousquet has represented, describe the natives either in Mexico or Peru, as being in the habit of artificially inducing this disease as a preventive. No one at present imagines that these facts at all diminish the glory of the man, who by unwearied industry succeeded in demonstrating to the world a fact, which if ever before presented to the notice of scientific observers, was by them unheeded and unimproved. [Although much has been written on vaccination, and on variolous and varioliform dis-

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eases, yet it must be admitted that a regular systematic work, embracing the recent views upon these subjects, has been much wanted. Such a treatise is that presented to us by M. Bousquet, and we now proceed to give some account of its contents.

In the first part of the work, the discovery and introduction of vaccination are considered. After quoting the observations of Jenner, in which he attempts to show that cow-pox owed its origin to the *grease* of the horse, M. Bousquet exclaims: "voilà certes une singulière généalogie!" He examines the question, however, very carefully, referring to the experiments of Woodville, Godine and others, and in particular to the case of a groom in Paris, who had the care of a horse affected with *grease*. There appeared on the fingers of this man, several sores resembling in every respect, the vaccine vesicle. The inoculation performed with matter taken from them is said to have succeeded. But as remarked by the author, although great stress has been laid on this case, it cannot be inferred with certainty that these sores were produced by the matter of grease, and in order to render the experiment conclusive, a cow should have been inoculated with this matter, and the fluid thus obtained from the cow, transferred to the human subject. The result of his investigations, like that of many others, is that no connection has been satisfactorily shewn to exist between the two affections.

The author has made a great many minute observations on the best means of insuring the success of vaccination. He has not, indeed, found bleeding from the punctures, friction of the patients' clothes, &c. so apt to cause a failure of the operation as some practitioners seem to imagine. M. Itard has even washed the puncture with water, the very moment after the virus was inserted; he has also used a solution of muriate of ammonia, and of chloride of soda, but all without the slightest effect in preventing the formation of the vesicle at the proper time. M. Bousquet has applied a cupping-glass to the puncture, raising the skin as usual, and causing a flow of blood, without impeding the absorption of the virus; in these experiments, the glass was sometimes left on half an hour. It is not to be supposed, however, that these means would always fail in preventing vaccination, particularly in those whose constitutions offer considerable resistance to its impression. Our author is inclined to believe that very hot weather is unfavorable to the success of vaccination; he also thinks it more difficult to succeed in

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adults than in infants, but we are not aware that there is any foundation for this latter opinion.

When an individual is unsusceptible of the vaccine disease, is there any danger of his taking small-pox? The author maintains that resistance to the one is always accompanied with immunity from the other. And in the great majority of cases, there can be no doubt whatever, that this is most fortunately true. Yet we should not lose sight of the statements of Jenner and others, who declare themselves warranted by experience in believing that some persons are susceptible of small-pox, who will not take the vaccine disease, and vice versa.

Most of the English writers on vaccination are very particular in following the example of Jenner and Willan, in describing the vaccine as a vesicular and not a pustular affection. The correctness of this view is denied by M. Bousquet, who speaks of the vaccine *pustule* in all parts of his work; the same language is also used by many other authors. The question is, perhaps, not very important; for every one knows, that until it reaches its full degree of development, the fluid contained in it is clear and limpid, but after this period, becomes turbid; and indeed our author has himself thus described its course clearly and accurately. It would seem advisable therefore to continue to consider it as a vesicle, thus deducing its character from the appearance it presents when at its height, for upon this principle have all eruptions been classed by the best writers.

In persons who have been exposed to the contagion of small-pox, and subsequently vaccinated, it sometimes happens that both diseases progress together, without influencing each other. Instances are not wanting in which the variola has proved fatal, at the time the vaccine vesicle was regularly passing through its various stages. Sixteen cases of this kind are reported to have occured in the variolous epidemic that prevailed at Marseilles in 1828. As this epidemic is frequently alluded to by M. Bousquet, who has taken considerable pains to ascertain the comparative mortality in the different classes of persons affected by it, we shall lay before the reader the general results of his inquiries. We shall throw them into a tabular form, for the advantage of more convenient inspection, and place along with them a similar view of the epidemic that prevailed in Edinburg, in 1818, described by Thompson. A comparison of the two cannot fail to be interesting. It is not necessary to point out the great difference of mortality in the vaccinated, in the two epidemics, nor need we suggest that Thomson's peculiar views in relation to varicella

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may have influenced him in admitting so many second attacks of small-pox, while at the same time the ratio of mortality is so small, when compared with that at Marseilles.

In the Epidemic of Marseilles, 1828.

		Had the disease.	*Died.*
Of those who	had never been vaccinated, nor had small pox,	4,000	1,000 (1 in 4.)
	had had small pox before,	20	4 (1 in 5.)
	had been vaccinated,	2,000	20 (1 in 100.)

In the Epidemic of Scotland, 1818.

Of those who	had never been vaccinated, nor had small pox,	281	70 (1 in 4.)
	had had small pox before,	71	3 (1 in 23.)
	had been vaccinated,	484	1 (1 in 484.)

The author has devoted a considerable portion of his work to the subjects of variola, varicella, and varioloid. He has collected with great care, numerous accounts of second attacks of small pox; among other cases, he refers to that of an individual who had the disease twice in one year. But as there are so many instances of second attacks, now on record, there can be no necessity for repeating his observations here.

The general view taken by M. Bousquet of varioloid diseases, is that variola, varicella, and the affection usually described as varioloid all arise from the same contagious principle, "the three being different degrees of the same disease." In believing varicella to be a form of variola, he has followed Berard and Lavit and Thompson, and has referred for most of his facts in support of the opinion, to the latter author. He has added but little to what is already before the profession upon this subject. He is willing to admit, "that the inoculation of the fluid of varicella will not produce variola, and vice versa." If this be granted, there would be little difficulty in showing that there is a varicella specifically different from small pox. For as there is incontestible evidence to prove that the fluid obtained from certain cases resembling varicella, will produce in the unprotected, a disease not to be distinguished from small pox; it is but fair to conclude that these vesicular eruptions in which such inoculation does not give rise to variola, are entirely and essentially distinct from it. In proof of the first part of this proposition, the famous case of Dr. Hennen's son, as well as others equally clear and convincing, might be cited. This is not, however, the place to enter into a discussion of this question. The whole subject, which is involved in perplexity and obscurity, by adopting the views espoused by our author, becomes clear and plain, when varicella is considered as a distinct disease, and varioloid is traced to two chief forms, the vesicular and the

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horny; the vesicular having been described by the older writers under the names of *chrystalline and vesicular small pox.* To this, there can be no propriety in applying the term *varicella varioloides*, as some have done, thus making two species of varicella, one the ordinary mild chicken pox, having no connection with variola, the other a modified small pox. The more common or horny species of varioloid, was distinctly described long before the introduction of vaccination, under the name of *horn-pock*, as has been shown by Mr. Bryce and others.

No distinction of this kind, however, is made by M. Bousquet, from whose description it might be supposed, that there was but little variety in the appearances of varioloid. The following observation, although not new, is important; "it is not true that the varioloid, which has been represented as the result of a kind of struggle between the vaccine disease and variola, attacks those only who have been vaccinated; it attacks those who have been vaccinated, those who have had small pox, and those who have had neither. M. Pariset found it in Egypt, on the islands of the lake Menzelech, where vaccination was not known."—p. 185. The observations of M. Gendrin, and the experiments of M. Cullenir are cited, to prove that those who have passed through varioloid, without having been vaccinated, are not subject to small pox in its ordinary form. It is therefore considered as established, that vaccination is not the only cause capable of modifying variola, so as to give rise to varioloid, but that occasionally the same result is produced by a previous attack of small pox, sometimes by idiosyncrasy, sometimes perhaps by the epidemic state of the atmosphere," however unfashionable this latter mode of explanation may have become.

One of the anomalies presented by this disease, is that the inoculation of unprotected persons with varioloid virus, sometimes produces only a local affection, and not small pox, as is generally the case. Examples of the kind have been noticed by several authors, but the following account of experiments, quoted by M. Bousquet, is remarkable in consequence of the number of persons in whom the peculiarity was observed; we shall abridge the statement. In 1826, a variolous epidemic broke out suddenly at Saint Pol de Leon. M. Guillou, not being provided with vaccine matter, determined to resort to inoculation, but instead of making use of the matter of small pox he took his virus from a patient laboring under varioloid. The result of this inoculation was a sore exactly resembling the

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vaccine vesicle. With matter obtained from this, he inoculated forty-two children, and matter from these was transferred to more than six hundred and sixty, the majority of whom had merely a local disease, a few only presenting general eruption. None of the persons so inoculated were attacked with the prevailing disease.—p. 208.

Our author next examines in detail, the question whether the vaccine virus has degenerated; whether the constitutional affection was more severe when vaccination was first practised, than at the present day, whether the vesicles and the cicatrices were larger. He finds no reason for believing that in these respects the virus has become deteriorated. M. Fiard attempted to inoculate cows with vaccine matter taken from man, and from his want of success, concluded that time had diminished its energy. But it does not appear that it was ever very easy to produce this transfer. In fact, it would seem that virus from one genus of animal is not readily made to act on another. Jenner, in relating his experiments, distinctly states, that he often found it very difficult to succeed with matter taken from the cow, inserted into the human arm. M. Guillotin saw a child inoculated with matter obtained from the cow, but without effect; afterwards, vaccine virus from another child succeeded perfectly.

Connected with the subject of this supposed deterioration, is the inquiry into the necessity or advantage of occasionally renewing the stock of matter, by taking it at its source. This is to be done, either by seeking for the disease in the cow, or by inoculating the animal for the purpose of producing it. Our author observes that the disease is extremely rare among cows, both in England and in France, and the same appears to be the case in this country. The attempt has repeatedly been made to find it in the neighborhood of this city, but without success. Where the natural disease could not be met with, the other plan we have mentioned has been tried. The experiment of inoculating the cow's udder with the ordinary vaccine matter from the human arm, has been frequently resorted to in France. Among other experiments mentioned by M. Bousquet, is M. Fiard's, whose unsuccessful attempts we have just adverted to. He inoculated twelve cows with vaccine matter, in February 1828, but without effect. He subsequently performed the same experiment on as many as seventy cows, which were young, in good health and brought from different districts, but could not obtain a single well-formed vesicle. He succeeded in one instance, however, in inoculating a young cow with matter,

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which was represented to have been procured from a cow in England, affected with the natural disease; with the product of this inoculation, he vaccinated six children.*

M. Bousquet endeavors to establish the opinion, that in all those diseases that commonly affect the system but once, the danger of a second attack increases with the time that has elapsed since the first. In conformity with this principle, when a patient has passed through the vaccine disease, the chances of his taking it again, must increase from year to year. And as this renewed susceptibility implies a liability to variolous disease, in some form or other, our author is obliged to admit that it may be advisable occasionally to re-vaccinate, although in the vast majority of cases, it would be found to have been unnecessary. He takes great pains, however, to show that this concession does not involve a belief in the deterioration of the vaccine virus. One of the reasons that have been advanced to prove that time diminishes its influence on the constitution, is

* A few experiments of this kind were performed some time ago in this city, under the direction of the Board of Health. Three healthy cows were inoculated on the udder with vaccine matter, and although the depth and place of the punctures were varied in every possible way, no effect was produced; inoculation with matter obtained from a small pox patient was likewise tried, but failed. The experiment on a fourth cow was more successful; for vaccine matter being inserted, a large, regular vesicle with considerable inflammation around it, was the result, and the scab formed by it was made use of to vaccinate several children. One of the crusts obtained from these patients, the writer of the present article had an opportunity of trying, but certainly could not perceive that the resulting vesicle or constitutional effects differed in any way from those produced by vaccine virus, which had passed through thousands of human beings without being renewed. Yet simply as a matter of curiosity, it is gratifying to obtain it fresh from its source. We should observe that the cow, which furnished this supply, was not inoculated with small pox matter, and it is certainly to be regretted that this experiment was not made. From the circumstance that the three others were unsuccessfully inoculated both with vaccine and variolous matter, and from the many fruitless attempts above mentioned, with vaccine matter alone, there is perhaps some ground for conjecturing that the cow, like the human subject, may be susceptible of the disease only once in her life. It would, therefore, have been interesting to have ascertained whether in this cow, the insertion of variolous matter would have had any effect, and also whether a second vaccination would have succeeded. We have been informed that the Board of Health intend to institute some further experiments upon this subject, in which the inoculation of the cow with small pox matter, will be made an object of particular attention. That such inoculation will sometimes produce the vaccine disease, capable of being communicated to the human subject, we have the testimony of Mr. Sunderland, of England, and also in this country, of Dr. Carpenter, of Lancaster, Pa., and Dr. McPhail of Baltimore.

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drawn from the occasional success of second vaccinations. Some practitioners indeed, have never met with cases of this kind. M. Bousquet refers to an essay of Mr. Barrey, in which he states, that he re-vaccinated more than three hundred patients, but in every instance without effect. In his own practice, although he had repeatedly made the trial, he never succeeded but once, and then the second vesicle passed through its stages rather more rapidly than the first had done. "But what I have not seen, others have seen. It has even been said, that in some persons, vaccination has succeeded three or four times, or even more. M. Trannoy of Amiens relates the case of a lady, who took the vaccine disease, whenever she was vaccinated. Other instances of the kind have occurred."

Although our author is disposed to admit that in some cases, the second vaccination may succeed in consequence of the first not having completely protected the system, yet he considers that in the majority of them, the affection is purely local; he traces an analogy between such instances, and the numerous cases in which a second inoculation of variolous matter produces a local sore, and no constitutional disorder. He mentions some experiments performed by the younger Legallois upon himself, for the purpose of ascertaining whether the vaccination he had undergone about thirty years before, when he was a little more than five months old, would still protect him from small pox. He had variolous matter inserted in his arm, but without the slightest effect. With the view of testing the correctness of an opinion advanced by M. Dufresne of Geneva, that it is always possible to produce variola in a person who has been vaccinated, if the number of punctures made in inoculating be sufficiently great, he now had twelve punctures made in each arm. The next day, the punctures were painful, and surrounded with areolar redness; in the evening, a pointed transparent phlyctena appeared in the centre of each, with considerable itching. Next day, the redness was diminished, and in the place of the phlyctena, there were small brownish crusts, which fell off in five or six days. He suffered little or no constitutional disturbance. He afterwards tried various irritating substances introduced in the same way, but none of them produced any effects at all resembling those of the variolous virus, which, according to our author, were of a decidedly specific nature.

The fifth day after vaccination, is about the period at which its power to protect the system from small pox becomes first manifest. This is of course on the supposition, that the vesicle

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has begun to appear as early as common. Besides the facts already on record, M. Bousquet has referred to numerous recent experiments by several French physicians, which establish this point. He has also mentioned various unsuccessful attempts to produce a second vaccination after the fifth day; in some few instances, it is said to have succeeded on the sixth day, but not later. He does not, however, seem to be acquainted with the suggestion of Mr. Bryce, to re-vaccinate in all cases, on the fifth day, for the purpose of testing the validity of the first vaccination.

A chapter of the work is devoted to the consideration of the question, whether the protecting power of vaccination is diminished, when the vesicles are injured. The author argues, that if the full effect of vaccination is obtained on the fifth or sixth day, it can be a matter of very little moment whether the vesicles are afterwards left untouched or not. He has also appealed to experiment; having opened the vesicles, he has applied nitrate of silver to the bottom, so as to put a stop to the local process. He has then re-vaccinated the children, and not in a single instance succeeded.

There is scarcely any question connected with vaccination, that has not been fully and carefully examined by M. Bousquet, and most generally an impartial account given of the facts and arguments connected with it. We have not considered it necessary to notice all his chapters, but those only that appear to us to possess some peculiar interest. That in which he discusses, *the degree of importance of the vesicle, in regard to the protective power of the vaccine disease,* contains some curious facts. The author begins by saying: "if it is true, as we believe has been proved in the foregoing chapters, that the number of vesicles does not add to the protective power of vaccination; if it is true that their progress may be arrested, without in any degree diminishing this power, and if in fine, large vesicles are not more effectual than those that are smaller, we have presumptive evidence that the vesicles in themselves do not possess any great importance. To this presumptive argument, we may add facts: the occurrence of the vaccine disease without any eruption, yet with all the properties it possesses when accompanied with an eruption. Two examples of the kind are to be found in the report of the committee on vaccination, of 1812. A child was affected, eight days after vaccination, with general uneasiness and feverishness; the vesicles were looked for, but in vain. Dr. Pistono, re-vaccinated it several times, without

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either fever or vesicles appearing. In another case, a patient who had been vaccinated unsuccessfully the year before, was vaccinated, and eight days after, had an attack of fever continuing thirty-six hours. Three new attempts were made, with this difference, that there was now neither fever, nor local disease. The child was afterwards inoculated with variolous matter, without effect." p. 311. The author goes on to state that in the report of 1814, the evidence of two physicians is given, who vaccinated children, without any vesicles appearing, but feverish symptoms resulted at the accustomed time. Variolous inoculation was then resorted to, but no disease followed. He refers to the testimony of others; but the most extraordinary is that of Mr. Tréluyer, physician to the general hospital of Nantes. In July 1825, small pox appeared in the hospital. Five children were vaccinated; on the second day, they had headache, chilliness; third day, fever,—no vesicles. M. Cormerais, surgeon to the hospital, re-vaccinated these five children, without any result; he vaccinated five others, who had headache, feverishness, but no vesicles. Another physician vaccinated five children with the same general symptoms, but no vesicles. Some patients were now vaccinated out of the hospital, in two different parts of the city, but always with the same result. In this manner, sixty persons were vaccinated, from the age of ten years, to twenty-four, and all presented the same constitutional affection, without any local disease, and this only after the first vaccination, but never after the second. These persons were for several months exposed to the epidemic, without being attacked by it; two only, in whom the vaccination had produced no effect, either constitutional or local, took the disease. The vaccinated patients were still to be subjected to another trial. M. Tréluyer selected five of those who had presented in the highest degree, the constitutional signs of the disease, and inoculated them with variolous matter. The succeeding day, they had chills, headache, nausea, vomiting, tenderness of epigastrium, diarrhœa, &c. These symptoms continued for eight days, and then disappeared, without any sign of eruption. The committee on vaccination of the Académie Royale, after stating that instances of the kind had previously been reported, are of opinion that from the respectability of the persons who observed the cases at Nantes, there is no room whatever to doubt the correctness of their statements. As these cases all occurred within a short space of time, M. Bousquet is disposed to account for them by a peculiar atmospheric

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constitution; he also institutes a comparison between vaccine disease without vesicles, and variola without an eruption; the *febris variolosa sine variolis* of the old writers. His opinion is that in vaccination, the constitutional impression alone is essential to furnish a protection from variolous contagion; he is even disposed to think, that in the cases above referred to, the constitutional affection was more severe than usual, in order to compensate as it were, for the absence of one of its ordinary attendants. Of the whole subject, both in regard to fact and explanation, our readers will judge for themselves.

The last chapter treats of the "*influence of vaccination upon population.*" As the introduction of this prophylatic has put such a decided check to the ravages of small pox, it would appear, that by knowing the amount of destruction formerly occasioned by this terrible disease, we should be able to estimate the advantage the world has gained by adopting vaccination. This mode of calculating must certainly be admitted to be correct. Yet the beneficial results of vaccination are not equally manifest under all circumstances. In new countries, where the means of subsistence are very abundant, its effects are decided. Thus of our country, M. Bousquet has the following flattering, but just observations. "There is a country that has passed rapidly from a state of barbarism, to the highest degree of civilization. Disdaining a foreign yoke, it has shaken off its chains, and to the advantages of civilization, has joined those of liberty. We are speaking of the United States. Among the wonders related of this happy country, one of the most astonishing, perhaps, is *the* increase of its population, which is said to double itself every twenty years. Such a result must doubtless have many causes, but one of the principal is vaccination, and its influence will be manifested, until the number of inhabitants shall reach a level commensurate with the productive wealth of the country." p. 354. On the other hand, in many old countries, the advantage which vaccination is capable of rendering to a state, cannot be perceived, because the increase of population is permanently checked by many powerful causes.

It is not necessary to detail here the calculations made by M. Bousquet, for the purpose of elucidating this question; for these we must refer to the work itself. The author's views of the influence of medicine in general upon population, will be understood from the following summary:

"1. There is but one cause capable of producing a percepti-

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ble and permanent increase in the population of a state, and this is, industry, or rather the *wealth*, which is inseparable from it.

"2. Medicine is of little or no avail in augmenting population, without this powerful auxiliary.

"3. When aided by it, it produces the happiest effects; but acts differently in different countries, according to the state of civilization, compared with that of population.

"4. In a country where successful labor produces more than is consumed, medicine constantly adds to the number of inhabitants, until a level is attained, corresponding with the means of subsistence.

"5. When this point is reached, it has only an indirect influence on population; but it tends still to prolong life, and in this respect, is no less valuable to governments than to individuals."

C. J.

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BIBLIOGRAPHICAL NOTICES.

ART. XII. *Illustrations of Pulmonary Consumption, its anatomical characters, causes, symptoms and treatment; with twelve plates, drawn and colored from nature.* By SAMUEL GEORGE MORTON, M.D., Physician to the Philadelphia Alms House Hospital; Lecturer on Anatomy; Member of the Royal Medical Society of Edinburgh, &c. &c. 8vo. pp. 176. Philadelphia: Key & Biddle. 1834.

CONVINCED, as we long have been, of the inestimable value of pathological anatomy, when fertilized by the collateral influence of careful clinical observation; and accustomed, as we have been for several years, to rank it amongst our favorite pursuits, it will be readily conceived that we hail with pleasure every attempt to investigate medical science in accordance with these principles, and to give it a character in correspondence with the philosophical spirit of the age. It is in consequence of this turn taken in the mode of studying disease, that a complete and most salutary revolution in medical science has been effected within the last thirty years;—that antiquated errors have been exploded, old systems broken up, an overweening fondness for hypothesis has been corrected, and that medicine, by becoming enriched by an abundant store of facts and principles, has acquired the character of a science based upon the principles of a positive philosophy. While our transatlantic brethren, possessed as they are of every opportunity and facility for the prosecution of their investigations, have been mainly instrumental in effecting this change, we have not been idle spectators; our country has furnished assistance in some degree proportionate to its means, and amongst others, it affords us sincere gratification to be able to welcome the present attempt of Dr. Morton, which we are disposed to regard as no trifling contribution. We not only give it a hearty greeting for its intrinsic merits, which are considerable, but as an earnest of that spirit which is working its influence—as a proof of a disposition, on the part of the profession of our country, to cut themselves loose from the vague and idle speculations by which they have been so long misled, and to give to their investigations that direction which can alone lead them to correct conclusions, and secure the establishment of valuable principles.

Dr. Morton has divided his work into nine chapters. The first embraces a summary view of those morbid conditions of the lungs and their appendages, which usually co-exist with phthisis: the second the anatomy of tubercular matter: the third the pathology of phthisis: the fourth the causes of consumption: the fifth the symptoms: the sixth its complications with other diseases: the seventh cases illustrative of other complications of phthisis: the eighth signs of phthisis derived from percussion and the stethoscope: the ninth the treatment. To these are added a concluding summary, comprising the general conclusions derived from the author's observations, and two appendices: the one furnishing a statistical view of the comparative mortality of phthisis

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in Boston, New York, Philadelphia and Baltimore; the other detailing a case of hemorrhage from the parietes of a pulmonary abscess.

We shall pass over the first chapter, to notice the second, which treats of "*the anatomy of the tubercular matter.*"

Tuberculous matter, as is correctly remarked by the author, presents itself in two very different forms; one of which is concrete, the other gelatinous: both of these varieties assume several different appearances.

"MILIARY TUBERCLES.—These are granules mostly of a yellowish or greenish gray color, sometimes diaphanous, sometimes opaque, varying in size, under ordinary circumstances, from a fig-seed to a cherry-stone. They are either isolated or grouped, in the latter instance forming considerable masses; but if these be examined in their incipient state by reflected light, or with a glass, they are found to consist of an aggregation of the granules above mentioned.

"These bodies are found on inspection to be extremely irregular in size; hence, in a state of aggregation, the masses are also extremely irregular, rounded, ovoidal, angular, stellated, &c.

"Tubercles of this kind are sometimes in masses of a deep brownish-red color, interspersed in others of a yellowish tint, giving the lung a marbled or mottled appearance.

"It is obvious that pulmonary tubercles derive their gray color from the pigmentum nigrum, as Laennec has supposed; when they are often of a much darker tint in advanced life, as seen in those that surround the encysted abscess.

"When vast numbers of miliary tubercles reach the periphery of the lung, their rounded surface causes a partial displacement of the pleura; so that on removing the latter, the lung appears as if covered with a pustular eruption.

"CRUDÈ TUBERCLE.—This is called the second stage of tubercular matter, and certainly it is so in reference to the diaphanous variety, in which the transformation commences by one or more opaque points, and ultimately involves the whole mass. When the change is complete, the tubercular substance has a yellowish white tint, a texture approaching cartilage, but more humid and less compact, and when cut into it is smooth and polished.

"It is certain, however, that tubercles often make their appearance in the opaque form, rendering the crude transformation, or rather the first part of the suppurative process, much less obvious.

"GRAY INFILTRATION.—*Matière grise demi-transparente.* (Louis.)—It is common to observe masses more or less considerable, of a light gray, translucent appearance, smooth, moist and shining when incised, and seemingly dense, but breaking readily under the fingers. No trace of air-vesicles remains; here and there are seen opaque spots of various shades of white and yellow, marking the progressive transition into the suppurative stage. Sometimes the crude transformation simultaneously pervades the whole mass. So also vomicæ form in various places, even while the surrounding portions still retain their original morbid characters.

"This variety, like the following one, manifestly results from an abundant secretion of tuberculous matter through a large portion of parenchyma at the same time: masses very similar in appearance, however, result from the slower process of miliary accretions, especially when the latter, assuming an angular form, coalesce into a uniform mass.

"GELATINOID INFILTRATION.—This substance is in some instances harder,

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in others softer than jelly. Its other physical characters vary greatly, it being sometimes semi-transparent and rose-colored, but more commonly colorless, or grayish, or of an olive tint. It fills the interstices between common tubercles, or pervades the parenchyma in a homogenous manner. In the latter state it often, when first secreted, resembles a mucilage, or more strictly the white of an egg, and has all the appearance of a nearly pure albumen, which it undoubtedly is. Although Laennec has given the name of *colloid matter* to this last variety, I am entirely satisfied that it is merely a form of tubercular disease, and of course subject to the same transmutations.

"Thus I conceive that the hypothesis of Cruveilhier, which supposes tubercular matter to be primarily secreted in the fluid state, is not unfrequently realized.

"TUBERCULOID GRANULATIONS.—*Granulations miliaires.* (Bayle.)—Bayle described these substances as different from tubercles, and I believe his distinction to be founded in truth. They are transparent or diaphanous, shining when cut, cartilaginous in their texture, mostly rounded or ovoid, and seldom larger than a grain of millet. When cut into, they appear each one to be contained in a distinct sac, from which it may be readily separated by a slight incision with the scalpel. Laennec and Louis consider them the first stage of tubercles; Broussais supposes them to be diseased lymphatic glands; while Andral ingeniously attributes them to the air-vesicles of the lungs, dilated and filled up in consequence of inflammation. Of the truth of this last proposition I have little doubt, especially since Dr. Horner's beautiful preparations of the air-vesicles have removed all ambiguity in reference to the size and form of the latter cavities, and their mode of inter-communication.

"I have examined several persons after death whose lungs contained these granulations only, without any admixture of tubercles; and a striking example of their probable origin in the vesicular inflammation of pulmonary catarrh, occurred to me very lately.

"A gentleman who had for several months been harrassed with a dry cough, and whose uvula was greatly elongated, applied to me for relief. I removed his uvula, and the cough ceased entirely. This was three years ago. He died in August of the present year, of inflammation of the bowels, and as his family requested an autopsy, I availed myself of the opportunity of examining his lungs: the right lung, especially towards the apex, contained a great number of these granulations in the diaphanous state, but no tubercles, and the parenchyma was healthy. The left lung contained a few of the same bodies.

"There can be little doubt that these substances were the remains of vesicles inflamed and filled up during the catarrh of which I have spoken. Had the catarrh been suffered to proceed, the granulations would have been developed in proportion, and their extensive accumulation would have constituted that state of the lungs which Bayle designated by the specific name of *granular phthisis.*

"I am therefore inclined to believe that these substances hold the same relation to the gray induration of pneumonia, that tubercles bear to tubercular infiltration: and if they should be subjected to analysis (which I am not aware has ever been directed to these bodies in particular,) they will probably prove to be composed of fibrine, and not, like tubercles, of albuminous matter."

We offer these extracts without comment, because the opinions or definitions advanced are so far in accordance with common sentiment as to require from us no notice. We shall, therefore pass to the next chapter, which treats

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of the pathology of phthisis. This, we regret to observe, is not so satisfactory as the author might have rendered it, by taking a more extensive view of his subject.

The greater liability of the apex of the lung to tubercular disease, is attributed by Dr. Morton to the confinement, and consequent compression of the superior lobes from the conformation of the cavities that receive them. This confinement and compression, he conceives, render the corresponding portion of the organ peculiarly liable to sanguineous congestion; which, by perverting the organic functions of the lung, may be put down as the proximate cause of tubercular disease.

In relation to the mooted question, whether inflammation should be considered as an indispensable condition in the development of tuberculous matter, our author has adopted the negative. He observes, that although "chronic inflammation frequently accompanies tubercular disease, and always in its second stage, it appears to be by no means essential to its secretion, any more than to the deposite of ossious particles in the coats of an artery; for pneumonia is well known to attack those parts of the lungs least susceptible of phthisis, viz: their inferior lobes. And again, the product of inflammation, where it assumes the chronic form, has but little resemblance, clinical or anatomical, to tubercular matter."

We are inclined to think that much of the disparity of opinion which has existed upon this point may be attributed to the vagueness of our ideas of the condition or conditions to which we apply the appellation, inflammation. The phenomena of which it is composed are mere consequences of certain pathological modifications of the solids and fluids, resulting from an inordinate stimulation of their vitalism. They should not, therefore, be erected into a fundamental state, or be regarded as the generating cause of other modifications. Adopting this view, we might be disposed to concur with the author, and those who espouse the same side of the question. But as he also objects to irritation, (at least as we infer,) which is the proper substratum or element of inflammation, our sentiments may be at variance. Indeed, we think he is a little inconsistent with himself. We have seen from the extract cited above, that the confinement and compression of the apex of the lung disposes it to sanguineous congestions, and thus renders it liable to tubercular development; and in another place he remarks, that "in the healthy living body, there is a constant secretion from the blood of an albuminous halitus, which is disposed in every part of the system, and in none so abundantly as in the cellular tissue. Whatever deranges this interstitial secretion, tends to the production of preternatural substances; hence any *irritation* may act as an exciting cause; not that it necessarily increases the activity of the secretory process, (which in health is amazingly prolific,) but because it *perverts* this important function."

Here, then, we have *sanguineous congestion*, *irritation*, and a *perversion* of the *albuminous secretion*, acknowledged as conditions directly concerned in the development of tubercles; yet notwithstanding all these states belong especially to that modification of the organism which is usually called inflammation, we are told that tubercles are formed independently of that process. Again we are told, that this secretion is of an albuminous character; that tuberculous matter consists almost wholly of albumen; yet that "the product of inflammation, when it assumes the chronic form, has but little resemblance, chemical or anatomical, to tubercular matter." The two first propositions are incontestible; but to the last we cannot subscribe. We are, on the contrary,

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inclined to think that the product of inflammation, even in its chronic stage, *does* bear a very close analogy, chemically at least, with tuberculous matter, admitting that the principle constituent of the latter is albumen.

If, however, we appeal to our author's enumeration of the causes of phthisis, we shall find that he has merely been warring about words; for there, as well as elsewhere, he admits the direct agency of *bronchitis*, congestions of the lungs, however induced, pneumonia, the operation of irritants upon the bron chiæ, &c. &c. in the production of the disease. While, therefore, he grants that these are causes, and admits congestion of the lungs, irritation, and perversion of the albuminous secretions as conditions, we cannot well conceive how he can deny the instrumentality of inflammation, or at least its equivalent, that degree of irritation which is its generating cause, in the development of tubercles. It would be well if the term inflammation could be discarded from the nomenclature of pathological science. It has no definite meaning, is not a fundamental condition, and is constantly, as is probably the case in the present instance, leading to an apparent difference of opinion, where in reality little or no difference exists.

In relation to the growth and disorganization of tubercles, Dr. Morton remarks:—

"Tubercles, as shown by Andral, grow by the successive deposit of molecules around the primary granule, until the mass may occupy an entire lobe of the lung. What proves the fallacy of Laennec's hypothesis of growth by intussusception, is the fact that the black pulmonary matter is sometimes seen in the body of a tubercle. If tubercles are inorganic, they never could have secreted this substance, which, on the contrary, from its relative position to the rest of the tubercle, has obviously been surrounded in the parenchyma of the lungs by successive deposits of tubercular matter.

"It has been already mentioned that each tubercular granule is enveloped by its appropriate tunic of cellular tissue, which at some period of phthisis takes on inflammation, and secretes pus. By this process the tubercular masses are completely disintegrated and softened, and mixing with the purulent matter, give it often a cheese-like, or curdy consistence. After a tubercle has thus become softened and removed by the interstitial secretion of pus; the cellular tissue that formed its tunic now forms the parieties of the abscess, and secretes the pus that is expectorated at subsequent periods of phthisis. If the tubercular mass has been circumscribed, and the inflammation of this cellular envelope protracted, the latter assumes a considerable thickness, varying, however, from a most delicate web to more than a line in thickness, and forms what is termed a cyst. These cysts, as we have previously observed, often completely isolate an abscess, leaving the surrounding pulmonary structure in a state to perform the respiratory function.

"The manner in which the blood-vessels are destroyed in tubercular disease, has never, that I am aware, been satisfactorily explained. The result of many observations directed to this point, leads me to the following conclusions: the cellular tissue constituting the outer coat of the artery, secretes its own tubercular matter, and preserves the form of the vessel until suppuration takes place. The middle coat of the vessel meanwhile preserves its red color; but between it and the internal coat a second layer of tubercular matter is observed, doubtless arising from a lamina of cellular tissue connecting those coats together. The inner coat, however, does not appear to change during the whole process of tubercular disease, but retains its pearly, diapha-

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nous and polished character. In order to trace this pathological condition of the blood-vessels, it is necessary to examine such of them as traverse a large tubercular mass, after the latter has become softened, but anterior to suppuration: if the vessels then be separated by cautious percolation with water, and a trunk be cut across, the several facts above mentioned will be rendered obvious. If, however, the examination be not made until after suppuration has taken place, the cellular tunic of the artery will be found to have granules or masses of tubercular matter adherent to it, not derived from the contents of the abscess, but from its own proper tissue: the portions intermediate between these granules are of a florid red color, and appertain to the denuded middle coat of the artery. This tuberculous degeneration of the blood-vessels is obviously derived from the vasa vasorum themselves."

In relation to the process by which tubercles become softened or disintegrated, some difference of opinion has existed. Most pathologists have attributed it to a kind of maceration, resulting from the influence of the purulent secretion which is poured out by the cyst enveloping the tuberculous mass. In another place,* we have objected to this explanation as it is usually given, upon the grounds that it is inadequate to account for some of the phenomena which attend the process. Thus, it has been remarked, that the process of softening generally, commences in the centre of the tubercle, and frequently progresses far at that point, before any change takes place at the circumference. This could not be if the pus which is found out by the proper cyst were the only cause of the disintegration. If a large tuberculous mass be submitted to a careful anatomical analysis, a more satisfactory explanation of the phenomenon will be afforded. It will be found, by injecting the vessels with some attenuated fluid, that besides the main cyst which surrounds the mass, there are, passing off from its internal surface, an infinity of delicate prolongations of the cellular tissue of which it is formed, which traverse the mass in every direction, to form a kind of investment for the multifarious granules of which it is composed. A delicate lash of minute vessels will also be found following the course of these prolongations, and ramifying through every portion of the tubercle. It is then, by a secretory and absorbent action taking place in this interstitial cellular tissue, or at least in the vessels that traverse it, that the centre of the tubercle is softened, and it is by a continuance of the same process, with perhaps in some instances a simultaneous disorganization of these prolongations, that the whole mass is finally disintegrated, and either broken down into curdy fragments, or converted into a particled fluid. This explanation does not differ materially from that offered by Lombard, Andral, and also Dr. Morton. They, however, have not adverted particularly to the interstitial vascular arrangement, which we conceive to be more concerned than the filaments of the cellular tissue, which isolate the granules of the tuberculous matter.

We shall merely make an extract from this chapter, on the causes of the disease, showing the influence of age. Upon this point our author remarks:—

"Without attempting to prove what every one must concede, I will merely add, that in the three years and a half ending with the month of June, 1833, there died of phthisis in the Philadelphia Alms House hospital, 331 persons. Of those whose ages could be satisfactorily ascertained (281 of the entire number) I have preserved the following memorandum.

* American Journal of Medical Sciences, vol. 10.

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Under one year,	3
From one year to ten,	1
From ten to eighteen,	4
From eighteen to thirty-five,	142
From thirty-five to forty,	51
From forty to fifty,	42
From fifty to sixty,	20
From sixty to seventy,	12
From seventy to eighty,	3
From eighty to ninety,	2
From ninety to one hundred,	1

"Thus it would seem that more patients die between the ages of eighteen and thirty-five, than in all other periods of life conjoined. I am confident, however, that many children die of real phthisis whose deaths are attributed to other causes; for there is a difficulty attendant on their autopsies in our public institutions that amounts to a prohibition.

"M. Lombard, of Geneva, has shown that tubercles are much more common between the ages of four and five years than at any other period of childhood, and, in fact, up to this epoch are extremely rare.

"Cases have occurred of tubercles in the fœtus; and in the following case, in which the patient was less than a month old, I strongly suspect the tubercular development commenced before birth.

"Case 5. *Tubercles in the lungs of a child within the month.*—A male infant, aged twenty-eight days, died in the Philadelphia Alms House hospital, June 3, 1833, of congenital strangulated hernia.

"*Autopsy*, assisted by Drs. Porter, Bacon and Thornton.

"*Both lungs* were free, but the left one contained in its lower lobe a number of tubercles, the largest the size of cherry-stones. Most of them were immediately beneath the pleura, of a yellow color, and surrounded by areolæ of red, condensed pulmonary tissue. The apices of the lungs, contrary to what is usually observed, were healthy.

"*Right cavities of the heart* dilated.

"Other organs natural, excepting the left testicle, which was highly inflamed, and firmly adherent to a portion of the ileum.

"Case 6. *Tubercular abscesses in the lungs of an infant three months old.*—A meagre and extremely delicate child, afflicted from its birth with cough, distress and inanition, died on the 23d April, 1833.

"*Autopsy*, assisted by Drs. C. A. Porter, Postell and Muhlenberg. Extreme emaciation.

"*Right lung* filled with crude tubercles, and an abscess the size of a large filbert in the middle lobe; this cavity was partly filled with thick pus, and presented a large perforation through the pleura, which contained a little discolored serum. The lung around the perforation (which was recent) was highly inflamed, and surrounded by a ring of coagulable lymph.

"*Left lung*. A funicular abscess towards the apex, almost as large as a hen's egg; the cords were numerous, crossed the cavity in all directions, were still pervious, and by means of a wire were traced to the pulmonary artery; their surface was enveloped by yellow tubercular matter, interspersed with red granules. Several vomicæ and numerous tubercles in both the inferior lobes.

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"*Liver* and *heart* healthy. *Mesenteric glands* much enlarged, with a few disseminated tubercles.

"*Brain.* Considerable effusion in the ventricles."

We shall be obliged to pass over many interesting cases and remarks contained in the chapters devoted to the symptoms of consumption, and a detail of cases illustrative of the disease, to take a brief notice of the author's experience in the treatment of phthisis. Here, unfortunately, medicine is incapable of achieving many triumphs: still it may do much, if it can only mitigate the poignancy of suffering, and prolong, in the slightest degree, the period of human life.

Dr. Morton speaks of the treatment, first as it is adapted to the more prominent symptoms of the disease, second in relation to the merits of those articles of the materia medica which have been found most efficacious in its treatment; and lastly, he devotes some separate observations to clothing, exercise, climate, and sea-voyaging.

To the indiscriminate practice of bleeding in all cases of hemoptysis he very properly objects, and restricts its employment to those cases in which the general health has been good,—to a first attack, where the pulse is strong, and the system feverish or excited. Ten or twelve ounces of blood, taken rapidly from a large orifice, may divert the current of the circulation and relieve the congestion. With this practice, he proposes the administration of a few doses of some internal remedy, such for example as spirits of turpentine, elixir of vitriol, common salt, opium, sugar of lead, &c. After this, cups may be applied to the subclavian region, to be followed by a blister, and subsequently a seton or issue, or a tartar emetic plaster. He enjoins perfect rest, and a diet of gum water and farinaceous food. He likewise concurs with Beddoes, in recommending an early removal to the country.

When, however, the hemoptysis occurs after protracted and unequivocal manifestation of other phthisical symptoms, or when it recurs after an interval of two or three months, he thinks bleeding would be prejudicial, and recommends issues and tonic and alterative agents: and to arrest the bleeding, some of the remedies mentioned above. He also employs repeated dry cupping, and directs a particular attention to clothing.

For the relief of the catarrhal symptoms, he recommends leeches and cups to the infra-clavicular region, gum water acidulated with lemon juice, and containing a little morphia and tartar emetic He also advises small blisters, but thinks large ones injurious; recommends a change from the atmosphere of the city to that of the country, or a sea voyage; and when the cough is dry and harrassing; he states that he has found a combination of Hoffman's anodyne with copaiva, useful in restoring mucous secretion.

Hectic, if severe and attended with a full pulse requires bleeding; but where the pulse becomes more frequent and irritable after it, it should be avoided. The fever may be allayed by the neutral mixture, acidulated mucilaginous drinks, spirits nitre, and sponging the limbs with cold vinegar and water: carriage exercise should be resorted to as soon as practicable.

To check the colliquative perspiration, Dr. Morton recommends the limbs and parts of the body to be sponged twice a day, with a solution of alum in spirits,—an ounce of the former to a pint of the latter: also the internal use of a strong infusion of sage, in doses of a wine glass full thrice a day, with six or eight drops of elixir of vitriol. In one instance he derived advantage from prussic acid: and also from a combination of alum and the sulphate of iron.

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Leeches and cups to the chest, followed by a small blister, and this again, by a poultice of bran and flaxseed, as recommended by Broussais, relieved the pleuritic symptoms.

He managed the diarrhœa by injections of morphia dissolved in gum water, or some bland mucilage; table spoonful doses of camphor water, and also a combination of this latter, with laudanum and nitric acid. In some cases he employed the moorish apozem, mentioned by Good, composed of a grain of alum, and a grain and a half of sulphate of iron.

Dr. Morton represents, that in some cases, when there was an irritable hectic pulse, he was much gratified with the effects of tincture of digitalis. He also found it very useful in relieving the distressing palpitations to which phthisics are subject. In relation to iodine, he states, that in a large number of instances, especially of incipient consumption, it appeared to suspend tubercular secretion, and with it the hectic, marasmus, cough, dyspnœa, and other ungent symptoms. He administered it according to the following formula.

℞.—Iodinæ, gr. iij.
Potassæ Hydriodat. gr. xj.
Aquæ distillatæ, ℥ j. m.

Dose from three to five drops, morning, noon and night, in a little water.

Prussic acid was likewise found useful in many cases. Dr. Morton found it to allay pain, and induce sleep, when morphia or opium were ineffectual—it also reduced the hectic pulse and dyspnœa, and calmed the cough. In the catarrhal and pneumonic forms of the disease, Dr. M. represents, that it acts with surprising promptness and efficacy. He also employed uva ursi, sarsaparilla, and tonics with advantage, in some stages of the disease. Speaking of fumigations, he remarks, he found when they were administered in the common way, the patients were distressed by them. But when prescribed according to the method recommended by Sir Alexander Crichton, they were very successful. This consists in combining the tar with carbonate of potash.

"Thus, an ounce of potash is added to every pound of tar, in order that the latter may be deprived of its pyroligneous acid. The two ingredients being well mixed, should be first boiled for a few minutes in the open air, in order to disengage any impurities, and then can be kept at a simmer in the room of the patient. This is readily effected by putting the composition in an iron vessel, and placing the latter over a spirit lamp, or some analogous contrivance.

"In this way not only a chamber, but an entire house, is speedily pervaded with a most agreeable vapour, which although it may at first excite some disposition to *cough*, both in healthy and sick persons, very soon in a great majority of cases, allays this symptom, and with it a great proportion of the patient's distress. In truth, I have seen it act like a charm. The very first case in which I employed it, was that of a lady who had recently lost both a brother and a sister by consumption, who herself had a lung disorganized by tubercular disease, and a constitution that had already suffered greatly from this cause. From the day that she commenced the tar inhalation her cough almost entirely disappeared, and all her other symptoms became, and still continue, greatly alleviated, excepting the pleuritic pain between the shoulders. Unpromising as this case was for a first experiment, the result was so pleasing that I gladly extended the same means to other patients, and I can most strongly recommend it in tubercular consumption, as a palliative of its most harassing symptoms, and in the catarrhal and pneumonic forms of phthisis as a cure. But I agree with the author just quoted, that in any case where the skin is hot and dry, and the ex-

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pectoration scanty, the tar vapour can scarcely be of service; and I am also free to acknowledge, that instances have occurred to me wherein the preceding symptoms were absent, and yet the vapour appeared to irritate, rather than tranquillize, the pulmonary organs."

Dr. M. gives the usual directions in relation to setons, issues, &c.; and in relation to diet, clothing and exercise, his advice is judicious.

The author has treated at some length on the subject of climate, but as his precepts accord generally with those given by Clarke, Johnson and others, we shall not follow him through this portion of his subject. We do not think the objection made by him against St. Augustine well founded. The fatal results mentioned by him were owing to individuals resorting there after their disease had advanced so far as to be beyond the reach of the benefits to be derived from change of air. It cannot be expected of any climate to restore disorganized lungs and a constitution completely worn out and exhausted by hectic. It is an act of cruelty to send such individuals from home, buoying them up with the delusive hope of relief, when all they can expect, under such a course, is to realize the bitter and heart-rending fate of dying in a strange land, far removed from all those endearments which could soothe their descent to the grave. Of the climate of St. Augustine, we can speak confidently, having repeatedly sent phthisics to spend the winter there; and when this has been done at an early period of the disease, we have had the satisfaction to see them return much benefitted.

The handsomely colored lithographs which accompany Dr. M's work, illustrate almost every pathological state concerned in consumption. They furnish, indeed, a beautiful series of graphic illustrations of the varying characters of the disease, and exhibit a favorable specimen of the perfection to which the invaluable art of lithography has attained in this country.

We regret that we have been compelled to confine ourselves to this mere bird's eye view of Dr. Morton's labors. We have found much to commend, and a little to condemn. Upon some points our opinions are at variance with those of the author; but these are not numerous, and we, perhaps, may be in the wrong. Notwithstanding this, we think the work is one which reflects much credit upon its author, and we can conscientiously recommend it to the members of the profession, as a source from which they may derive much valuable information. We only regret that Dr. Morton has been so brief upon many points of importance. A voluminous work is confessedly often a great evil; but in the present case, we think we have cause to complain of an opposite fault. This, however, we trust Dr. Morton will correct on a future occasion. Φ.

ART. XIII. *"Graphic Illustrations of abortion and the diseases of menstruation, consisting of twelve plates from drawings engraved on stone, and colored by Mr. J. Perry, and two copper plates from the Philosophical Transactions colored by the same artist. The whole representing forty-five specimens of aborted ova and adventitious productions of the uterus, &c., &c.* By A. B. GRANVILLE M.D. F.R.S., &c., &c., London, 1834, pp. 40.

IT is with entire satisfaction, that we have carefully examined the splendid work of Dr. Granville, on abortion and the diseases incidental to menstruation; which, while it illustrates an interesting class of diseases appertaining to utero-gestation, is a highly creditable specimen of the arts, and adds another to the accumulating evidences of the rapid advancement of English typography

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and lithography. But a few years since, and the eyes of the world were directed to France as the great laboratory of faithful and rich iconographic illustrations, but such publications as Carswell's pathology and the one now before us, must tend greatly to award to the English press an elevated and enviable station.

The introductory chapter is occupied with a summary of the views entertained by physiologists in relation to the immediate changes which take place in the generative apparatus of a female, after a fecundating copulation; the descent and development of the ovulum; the relative development of the different organs of the fœtus; the anatomical peculiarities of the placental mass; the part it performs in the nutrition of the embryo; and lastly, a reference to the opinion of Muller, and Geofrey St. Hilaire that the growth of the fœtus is facilitated and its inherent life preserved by respiring an air analogous to atmospheric air, which is contained in the amnionic fluid. As our intention is merely to direct the attention of the profession to the work, we shall not enter into a detailed account of the various opinions advanced upon the foregoing interesting questions, but will content ourselves with referring each individual to the work itself, and pass on to notice the specimens of abortion.

Plate 1, illustrates the aborted mass of from *three* to eight weeks after menstruation; the gradual increase in the development of the ovulum and its appendices; and proves conclusively, in the opinion of our author, that the embryo, called into existence by a mysterious act of fecundation, lives independently of the mother and possesses a life wholly its own.

The second plate represents the ovum and its membranes, aborted at the eleventh week. In the first sketch we have presented the external or placental envelope investing the entire ovum, and exhibiting the uneven and almost cribriform surface of the fleshy envelope, furnishing at the same time a beautiful view of the numerous orifices, by which its adherence to the uterine vascular lining resulting from the act of fecundation is accomplished; another drawing displays the same ovum after its inner or secreting involucrum, the amnion, has been laid open. The amnion was tinged with blood and the cord distended with the same fluid, which pervaded also the liquor amnii: a similar condition of things is displayed in the third drawing. To these illustrations the term plethoric has been applied.

In the following plate, the author has furnished three specimens of morbid human ova, taken from the museum of St. George's Hospital, and representing most beautifully a morbid development of the external involucra of the semi-coriaceous character in ova, of from nine to twelve weeks after menstruation.

The drawings of ova at the fourth month, are those in which additional or pseudo-membranes were developed to seven in number, and in plate 5, we have another view of the coriaceous product at the fourth month. The remaining plates present us with illustrations of aborted ova at the different periods of the utero-gestation, the most interesting of which we shall hastily notice. The tuberculous products found upon the amnion, not only furnish an illustration of an interesting morbid condition, but establish to the satisfaction of Dr. Granville the vascularity of the inner or, as he terms it, secreting membrane. This is esteemed as an exceedingly rare form of degeneration.

Under the head aberrant fœtal gestation, is a representation of a fœcundated ovum in the ovarian receptacle described as follows:

"The membrane in contact with the parietes of the cavity is pulpy; the other membranes are better weaved and clothy. The cavity itself seems to occupy the entire volume of the ovarium, which is enlarged to nearly four times the

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size of the right ovarium. The fallopian tube corresponding to the enlarged ovarium, is not in the least involved in that enlargement, although it is adhering to the periphery of its ovarium by a portion of the fimbriated end; the fimbriæ, however, being left free. We have neither disease nor enlargement in the ovarium and fallopian tube of the right side."

Amorphous and flocculent depositions were found within the uterine cavity.

The ovum is sometimes detained in the fallopian tube and proceeds to develope itself, an instance of which is presented in plate 9. One of the most interesting specimens of aberrant fœtal gestation, is that in which the ovum is found embedded in the interstitial structure of the uterine walls, a view of which we have in plate 10, where upon the upper surface or base of the uterus a swelling of a red color was observed. It was so abundantly supplied with blood vessels as to present the appearance of inflammation. Two lacerations had taken place in the thinnest part of the coats of the thinnest part of the tumor, and conducted the observer to a cavity or sack which contained an embryo of eleven weeks growth; it was enveloped within two transparent membranes on the external of which was found the rudiment of a placenta. This *embryoferous* cyst was separated from the real cavity of the womb and had no connection whatever with it.

The eleventh plate contains illustrations of those organizations styled by our author dysmenorrhæic; to wit, a pulpy tissue of an extremely loose texture, scarcely deserving the title of membrane, of a bright red color when thrown off the uterus, but assuming a yellowish tint by maceration in water. When examined by a powerful glass it appears to be an assemblage of gelatinous globules. This membrane was thrown off by a patient constantly suffering from dymenorrhœa. A similar pulpy tissue, but of firmer texture, was found hanging from the orifice of the uterus and removed; it is presumed to have lined the internal surface and was expelled by sharp forcing pains. Several coagulæ thrown off by the uterus are represented, but as there is nothing remarkable attendant upon their examination, we will briefly remark that under the class of polymenorrhæic stratifications, several pseudo-ova or moles are handsomely delineated.

We cannot but reiterate, in concluding this brief notice, that the execution of the work is highly creditable to all the parties concerned, and that the artist engaged in executing the drawings and colouring, deserves the commendation and encouragement of a liberal community. A. L. W.

ART. XIV. *A Dictionary of Practical Medicine, comprising general Pathology, the nature and treatment of diseases, morbid structures, and the disorders especially incidental to climates, to the sex, and to the different epochs of life; with numerous prescriptions for the medicines recommended; a classification of diseases according to pathological principles; a copious bibliography, with references; and an appendix of approved formulæ.* By JAMES COPLAND, M.D., Consulting Physician to Queen Charlotte's Lying-in-hospital, &c. &c. Part I, from *abdomen* to *cancer*, pp. 288. Boston, Lilly, Wait, Colman, and Holdan, 1834. Part II, from *climacteric decay to dropsy of the cellular tissue*, pp. 303. London; Longman, Rees, Orme, Brown, Greene, and Longman, 1833.

IT has long been matter of surprise, that after the very favorable reception of Mr. Samuel Cooper's Dictionary of Practical Surgery, no similar attempt should

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be made to furnish a similar digest of medical science; to collect together and embody its principles; strip them of all mere vague and illusory hypothesis; and dispose them in an order at once compact and convenient for reference. Such a work has long been wanted by the medical profession, and fortunately this desideratum is now about to be supplied. Dr. Copland, as will be seen from the caption of these remarks, has already advanced far towards the consummation of this end, and if the parts which are before us may be taken as specimens of the whole work, we do not hesitate to say, that when the whole shall have been completed, he will have accomplished a most important task for medical science. He appears, indeed, to be singularly well qualified, by a mind well disciplined and richly stored with the literature of his profession, by extensive experience and close observation, by a happy and lucid method in the disposition and arrangement of his ideas, and a concise and perspicuous style of expressing them, for the accomplishment of such an undertaking. He has travelled over the whole *terra incongrua* of medical literature, has diligently explored the whole intricacies of its various departments, threaded its devious labyrinths, mastered its strong holds, and himself steering clear of the withering influence of sectarianism and the vagaries of speculation, collected from every source and concentrated in one focus, the leading facts and principles of the healing art, which have been established by the concurrent labors of physicians of all ages and all countries. With truth alone for his object, he has carefully sifted the opinions of his predecessors and contemporaries, and with a candor and honesty, which unfortunately we too seldom meet, has attempted to separate the spurious grain from the sound and genuine kernel, and has spread the latter before us divested of all its crude and extraneous accompaniments.

To analyse such a work would be impossible. It is literally a digest of medical science, comprising not only the proper details which appertain to special pathology and therapeutics, but likewise what in our opinion gives it a value far above any of the ordinary systematic treatises on the practice of medicine; the entire range of general pathology, as comprehended under the several heads of private and public hygiene, etiology, symptomatology, and diagnostics.

Most of the articles contained in the two parts which have been published, are well drawn up, and present a fair exposition of the doctrines and practice most prevalent at the present day. Their length is generally well apportioned to the importance of the subjects of which they treat, and is seldom uselessly extended by idle speculations and tedious disquisitions. In the first part, the articles *angina pectoris*, *apoplexy*, *asthma*, *brain*, *bronchi*, and some others, have been treated at considerable length, and some of them contain more truly practical information than we recollect to have any where seen condensed within the same compass. Several of the articles on general pathology are also highly valuable. The second part is in no respect inferior. The articles *climate*, *colic*, *convulsions*, *croup*, *debility*, *digestive canal*, *disease* and *dropsy* are the most elaborate, and seem to have been wrought up with much care. There are, however, many others which though brief, are highly commendable. There is one feature that pervades them all, which we do not hesitate to delare, constitutes one of the most valuable features of Dr. Copland's labors;—we mean the extent to which pathological anatomy has been called into requisition in illustrating the character and treatment of disease. This we are pleased to see, because we feel assured that it constitutes the most fruitful source of medical facts and principles, and that our therapeutics can only be successful when we suffer ourselves to be properly guided by its invaluable lights. No circumstance has con-

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tributed so much to the rapid advancement of the science, which has taken place within the last thirty years, as the assiduous attention which has been devoted to that department of it, and although there are still a few, who in their blind devotion to the spiritualism of former times, rail against it as valueless, every truly well-informed and intelligent physician of the present day is compelled to confess, that to acquire a correct knowledge of diseases, we must interrogate the organization in order to determine their seats, ascertain the ravages committed by them upon the living structures, and what disturbances these ravages will be likely to develope in the different parts of the animal economy.

In adopting this course, Dr. Copland has therefore succeeded in making a work which must give him a high rank amongst his contemporaries, and which cannot be regarded otherwise than as a most valuable acquisition to our stock of medical literature. It will be seen that the enterprising Boston publishers have determined to furnish an American edition of it, the first part of which they have already issued, and we think that every physician should avail himself of the opportunity thus offered of adding it to his library. Φ

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QUARTERLY SUMMARY OF INTELLIGENCE.

FOREIGN INTELLIGENCE.

ANATOMY AND PHYSIOLOGY.

1. *Confirmation of Sir Chas. Bell's Opinions on the Functions of the Anterior and Posterior Fasciculi of the Spinal Nerves.*—Our attention has been recently drawn to a very valuable paper of Professor Muller, of Bonn, in a late number of the Annales des Sciences Naturalles. The experiments which he adduces are most satisfactory, and will be no doubt considered conclusive, even in Germany, where the doctrine of the separate functions of the abdominal and dorsal roots of the spinal nerves has not been altogether assented to. Meckel, Rudolphi, Weber, and others have admitted it, only as conjectural; our author himself performed some experiments in 1824, with the view of ascertaining its correctness, but the results were far from being uniform and decisive. Bellingeri, in Italy, was also engaged about that time in similar researches, and the conclusions which he drew were, that the anterior fasciculi presided over the sensibility, and the flexion movements of the trunk and extremities, while the posterior presided over the movements of extension. Even Magendie, to whom the second seat of honour is due, as a physiologist of the nervous system, and along with him Desmoulins, in their Anatomie des Syst. Nerv. have not assigned totally exclusive functions to the two sets of nerves in question. Their own words are—"Si l'on galvanise l'une après l'autre, une racine dorsale, et une racine abdominale, qui ne communique plus avec la moelle, on obtient à la verité des contractions par chaque racine. Mais les contractions par les racines anterieures sont en general plus fortes, et plus completes, que par les racines posterieures. Les racines posterieures pincées, tiraillées, piquées, causent de la douleur, mais une douleur bien moindre, que cella qui result de l'irritation de la partie correspondante de la moelle. Alors aussi les muscles correspondans aux nerfs, dont on irrite une racine, se contractent; mais se contractions sont encore moindres que dans le cas de l'irritation même de la moelle. La section d'un faisceau de racines dorsales cause une secousse de tout le membre correspondant. Les resultats sont inverses en operant sur les racines abdominales; leurs figures, leurs pincemens, produisent des contractions plus fortes et convulsives, tandis que les signes de douleur sont presque nuls. L'isolement des deux proprietés dans chacum des ordres de racines *n'est donc pas absolu.*" Muller commenced a new set of experiments on rabbits, in order to determine this most interesting question; but he found that the previous operation of opening the vertebral canal was so difficult, and attended with such excessive pain to the animals, as frequently to induce involuntary twitches of all the muscles even when the nerves were not directly irritated, so that he was precluded from deducing any satisfactory conclusions. Indeed there must always be this strong objection to all trials made on the higher animals; but the happy thought of Muller, to examine the spinal system of the frog, has fully compensated for the uncertainty of these. The vertebral canal of the frog may be opened with very little trouble, and with comparatively trifling pain; the animal is so tenacious of life, that it remains quite lively after the operation, and the peculiar arrangement of the anterior and posterior fasciculi of nerves, further facilitates our investigations; for these con-

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tinue to be distinct from each other, and easily separable for a considerable distance from their points of origin; the posterior root may therefore be raised on a needle and submitted to experiment, while the anterior one is free from all injury. We shall first mention the effects of simple mechanical, and then those of galvanic irritation on the two sets of nerves.

1. When the posterior root is divided the animal appears to experience "quelque douleur;" if the distal, or unattached portion be now seized and irritated, there is not the slightest trace of movement in any of the muscles of the trunk, or of the extremities. When the anterior, or abdominal root is simply touched, convulsive movements of the extremities immediately follow. The same phenomenon, only more violent, are observed when this root is cut and irritated.

2. The galvanic experiments were performed at first with a single pair of zinc and copper plates. Upon applying the two plates to cut ends of the anterior roots, the muscles became convulsed; but no such effect was ever produced when they were applied to the posterior roots. This latter position contradicts therefore the assertion of Magendie and Desmoulins; but we must remember that their experiments were performed on mammiferous animals; and in these the two sets of roots are too short to enable us to separate them satisfactorily from each other, and thus to avoid the irritation of one set, while we are experimenting upon the other. Even in the case of the frog, it is necessary, for the sake of accuracy, to isolate the one from the other by means of the small glass plates; because the galvanic irritation of the motor nerves is found to take place at the distance of half a line. But in order to insure perfect accuracy, it is better to employ a small voltaic pile; for then we may either apply both poles to the cut end of the nerve, or we may apply one there, and the other to some of the muscles. The following are the results of Muller's experiments in this way.

1. When the two poles are applied to the posterior roots, no convulsive movements follow. 2. When one pole is applied to the posterior nerve, and the other to some muscle at a distance, slight movements of the muscles which are situated in the tract of the galvanic current are observed. 3. When the anterior root is made the subject of these experiments, convulsive movements immediately occur, whether both poles are applied to the nerve, or only one, the other being applied to a muscle; and these movements take place not only in the muscles which are situated in the tract of the current, but throughout the whole extremity. 4. The same result, viz. the occurrence of convulsions, is obtained when one pole is applied to the posterior, and the other to the anterior root. We may therefore safely draw the conclusions, that the posterior roots of the spinal nerves never directly and of themselves provoke muscular contraction; that when they seem to do so (as in the 2nd result) it is only from their acting as conductors, just in the same way as any other moist animal substance, of the galvanic current; and lastly that the anterior nerves not only are conductors of the galvanic current, but also are excited thereby to induce muscular movements in the direction of their branches. Now one of these anterior nerves may be deprived of its "vis motoria," and yet retain its conducting power:—to exhibit this, we need only seize and compress it firmly at a little distance from the cut end; and we shall find that no irritation, either mechanical or galvanic, applied between the point of compression and this end will induce any contractions; but if one of the galvanic poles be applied to the end and another to a distant muscle to which the nerve is distributed, then contractions will immediately follow, just as if there was no intermediate pressure; shewing thereby most distinctly that the nerve retains its conducting power.

It has been supposed that galvanism acts as a special and peculiar irritant to the nerves, and in a manner altogether different from mere mechanical injury; but this is not true, for any foreign body, even not metallic, such for example as a quill, when applied to a motor nerve, will provoke muscular contractions. Muller, from multiplied observation, has been led to conclude,—1, that galvanism acts upon the nerves like any other extraneous agent—2, that it is not the proximate cause of muscular contraction; but only that it irritates the nerves, and provokes their "vis motoria," which is altogether different from a galvanic

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power—3, that it has been proved that nerves are better conductors of galvanism than other moist animal substances—4, that galvanism excites movements, only when a muscle or a motor nerve are situated in the tract of its current—5, that there are some nerves which have no moving power, and can never of themselves induce any movements; that these are only passive conductors of galvanism—6, that there are other nerves which induce muscular movements, not only on the application of galvanism, but also of any mechanical irritant—7, that the dorsal or posterior roots of the spinal nerves have no "vis motoria," but that the anterior have, and that, from these last, all the motor fibres of the conjoined spinal nerves are derived. He once more alludes to the fallacy of believing that the posterior are ever motor nerves, merely because, when one pole is applied to them, and the other to a muscle, certain movements take place.

The next object of his investigation, was to ascertain what effects are produced by irritation of the proximal, or attached ends of the divided anterior and posterior roots. He found that, when a mechanical agent, or when both poles of a galvanic apparatus, were applied to any of these, no muscular movements were ever induced; but that, when one pole was applied to the portions of the roots adhering to the extreme parts (cauda equina?) of the spinal marrow, and the other to some anterior part of the body, as, for example, the head, the muscles of the trunk and extremities were thrown into convulsions. In one experiment, he divided all the anterior and posterior roots as high as the cervical portion of the marrow, and then gently lifted out the spinal cord from its canal, and laid it upon a small glass plate; upon applying both poles to its sacral extremity, there were movements in all the parts which had been left connected with the marrow, viz. the neck and anterior extremities. If this position be confirmed, it would shew, that the spinal cord is not to be considered as only the "ensemble" of the nerves which issue from it: for we have seen that the portions of the roots which may be left adhering to the extreme parts of the marrow, do not, upon any irritation, induce muscular movements, but that the marrow itself, if irritated, does.

A few cursory remarks on some of the cerebral nerves are appended to the preceding valuable memoir. Muller agrees with Mayo and others, that the portio dura is not solely and exclusively a motor nerve—when irritated, the animal seems to experience pain. The infra-orbital nerve is one of mere sensation—it has no "vis motoria." With regard to the nerves of the tongue, Muller is led, by his experiments, to state that the lingual, or ninth cerebral nerve, when irritated or galvanized, provokes violent convulsions of the member; that the gustatory, or third division of the trigeminus, excites none of these phenomena, either by mechanical or galvanic agency, except, indeed, when one pole is applied to the nerve and another to the tongue; but, as we have explained before, this sign is quite fallacious, the nerve serving only as a conductor. The glosso-pharyngeal nerve, on the application of both poles, excites convulsions in the pharynx. These experiments accord with those of Desmoulins and Magendie.

When the lingual nerve was cut, the animal (a cat) seemed to suffer pain; and hence Muller believes that this nerve, although chiefly a motor, is also, in some degree, a sensitive nerve, in the same manner as he supposes the portio dura and par vagum to be. But his experiments here appear to us far from satisfactory.—*Medico-Chirurgical review, January*, 1834.—*From Annales des Sciences Naturelles.*

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2. *Anomalous position of the Larynx during Singing.* By Dr. Bennati. (*La Lancette Francaise, 15th October* 1833.) In a memoir read before the Academy of Sciences on 30th September, Dr. Bennati gave an account of an anomaly during singing, observable in M. Ivanoffs, a Russian, 23 years of age, and *tenor contraltino* at the Italian Theatre. His voice is a counter-tenor, which is capable of reaching the deepest *sol*, or an octave, below the ordinary bass voice. The tone, during the utterance of this note, resembles the fictitous voice of ventriloquists. The larnyx is placed anteriorly and superiorly, as occurs in the emission of ordinary sharp sounds. This prevents the

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position of the superior margins of the thyroid cartilage from being ascertained. The *genioglossi, basioglossi, geniohyoid* muscles, &c. as well as those of the jaws, are contracted to the utmost. It is remarkable, that during the utterance of notes belonging to the natural diapason of this individual the mechanism is the same as that observed, but when he goes lower, which he can to the extent of a whole octave, the phenomenon mentioned above occurs.

[*Edinburgh Med. and Surg. Journal, Jan.* 1834.

3. *Remarkable Malformation of the Heart and its Great Vessels.*—In August, 1825, Dr. Holst, of Christiania, examined the body of a female child, aged seven, who had expired in a paroxysm of suffocation, after having, from her second year exhibited all the symptoms of cyanosis. These had at first been slight, but gradually increased in intensity, till at last death put an end to the patient's sufferings. The following was the result of the examination:—

The heart was unusually large, and the pericardium contained about half an ounce of serum. The right ventricle was about twice as large as the left, and its columnæ carneæ were much stronger. In the upper part of the septum of the ventricles was an aperture, about half an inch in diameter; just, beside this aperture the aorta and pulmonary artery arose, *both* from the right ventricle, the latter somewhat upwards and forwards; they were each about a third less in volume than usual. The right auricle was larger, and its bundles of muscular fibres stronger than ordinary: the left was uncommonly small, and the foreman ovale open, as in the fœtus. The valves were all natural.

The aorta gave off from its arch, three distinct and remarkably large arteries, namely, the right subclavian, the right carotid, and the left carotid; but there was no left subclavian. It then diminished considerably, and below the arch was of but half its former size.

The left arm was next examined for the brachial artery, which was found, and traced to the thorax, where, as the left subclavian, it suddenly terminated at the second dorsal vertebra, almost an inch from the aorta. The subclavian portion gave off the usual branches: its vertebral artery was even remarkably large, passing from below upwards, and somewhat inclining to the left.

The pulmonary artery, which was very small, gave off from its left branch, from the same place where the ductus arteriosus is generally found, a canal, two inches long, which likewise went upwards and towards the left side, and entered the left subclavian, at almost a right angle. This canal was small, but pervious.

The lungs were small but natural: the thymus, on the contrary, was remarkably large, and appeared to have increased with the growth of the individual, instead of diminishing.—* *Eyr*, vol. vii. part iii. for 1832.—*ib.*

4. *Case of Malconformation extending through the Alvine, Urinary, and Genital Organs.* By Philip M. Lyons, M. B., A. M. Eliza Scott, 35, New Dorset-street, Brighton, mother of nine children, all of whom were perfect, was taken ill on the 24th of August, 1832, and after twelve hours' labor, was delivered of a seven months' child. The infant, a large one for its age, breathed slightly, but was extremely livid and weak. Seeing it was not perfect in the extremities of its urinary or alvine canals, but being desirous of ascertaining to what extent life could be prolonged under such circumstances, I availed myself of every possible means to resuscitate it. It continued to breathe for nearly an hour, during which time, the fists were almost constantly closed, and the limbs spasmodically drawn up; especially, whenever any strong stimulant was had recourse to.

Permission being obtained to examine the mal-formed parts, the following appearances presented themselves: the size was that of an aged fœtus; there was the trace of a nipple on the right side, but none on the left. Below, and in front of the pubis, and occupying the place of the penis, there projected forward and

* Eyr is the title of a medical periodical published at Christiania.

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downward, a thick roundish process, measuring three inches in length, and three inches and a quarter in circumference, having a solid thickened feel throughout, with the integuments very much wrinkled. The latter terminated in front, in what appeared to be a prepuce phymosed in its anterior and inferior parts, and consequently, pouting beyond the glans penis, which was of a natural form, and of about the size of half the kernel of a Spanish nut, but of a purple color, as though it were gorged with venous blood; in its centre, it presented a dimpling cavity, so very minute, that only a small bristle could be introduced into it. To the sides of this process or penis, as it comes from the rami of the pubis, two other processes were attached; the one on the right side, three quarters of an inch in length, and the same in diameter; the other an inch and half each way; both pyriform in shape, the investing integument of each very thin, and only to be compared to that of the scrotum when distended with fluid. The penis being turned upon the abdomen, there was no trace of either scrotum or anus, and but a very slight one of the raphe. The integuments were continuous with those covering the nates and sacrum; a slight blush of red was noticeable over a very small space in front of the coxcyx. The abdomen being opened, the right lobe of the liver was found to extend as low as the corresponding ilium; the left one projected into the left lumbar region. In front of the abdomen, and stretching almost as high as the umbilicus, lay the bladder, the coats of which felt much thicker than ordinary. On raising the liver, which was of a darker color than is usual in the fœtus, and which seemed very much congested, the gall bladder was seen distended with bile. The hepatic, cystic, and common ducts were all pervious.

The stomach being opened, the form and situation of which were perfectly natural, it was found filled with a gluing kind of mucus and some spirit and water, which had been used as stimuli. The duodenum and other small intestines, whose appearance and position were natural, contained a peculiar species of gelatinous substance, not unlike dissolved muscle; these ended in the cæcum, which was placed immediately below the central fissure of the liver; thence proceeded the colon, which, having passed down into the left iliac fossa, crossed behind the bladder into the right one, and ascended as high as the last false rib, on that side, whence, inclining backwards, it bent down to the inferior fundus of the bladder, where it terminated in a firm tendinous substance which became incorporated with the coats of that viscus, at a point corresponding with the centre of the trigone. This intestine, which not having any longitudinal fibres, was consequently divested of its usual sacculated appearance, was filled with a substance similar, except in color, to that which filled the other intestines: the hue of this matter was dark green, intermixed with yellow flakes, not unlike to yellow wax, and to part of the contents of the gall bladder. The intestines being removed, the kidneys were discovered in their proper situation, but much broader and flatter than usual, and as though they had been beaten out; on being cut into, they were found to contain a reddish serous fluid; neither of them had any ureter, but was connected by cellular bands with a sort of vesicular body, which lay in front of the aorta, and over which terminated in a fibrous expansion, a white, somewhat thickish tube, pervious a considerable portion of its length, and which arose from the right angle of the trigone; this vascular substance being laid open, it appeared to consist of distinct cells, unconnected with one another, and each containing a substance similar to that in the intestines, but in a more diluted state. The bladder being divided, two openings were found in it, one in either angle of the trigone; a bristle being passed into one of those, it proceeded into the tube or ureter, already described; the second, instead of taking a similar course, seemed to incline forwards, towards the arch of the pubis. Having freed the glans from the surrounding prepuce, I laid open its orifice which was lined with the epidermis, but which terminated in a fibrous cord, that extended back to the arch of the pubis, and there lost itself in cellular tissue; on dissecting this process still deeper, I found immediately beneath this fibrous structure, or obliterated urethra, a large cavity extending from beneath the arch of the pubis to beyond the glans, where it terminated in a cul-de-sac.

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The appearance of the lining membrane showed this at once to have been the rectum; on examining it more minutely, I found the extremity of the bristle which had been introduced into the second opening of the trigone, and which seemed to pass into this cavity with apparent ease, as though there was a free communication between the bladder and it. The large cyst on the left side of the penis being denuded, was found to be lined with a mucous membrane, divided into cells, and filled with a matter similar to that already described, in the midst of which lay a perfect testicle, about the size of a silver fourpence, and having its epidydimis complete. The cord followed its usual course as far as the ring of the external oblique; beyond which time would not permit me to trace it. The process on the opposite side was devoid of testicle, but in every other respect similar to the large one. On seeking for the testis belonging to this side, it was found below the kidney, apparently blighted, and of the size of a silver twopence. It is hardly necessary to observe, that had this child lived sufficiently long to allow of it, any attempt to form an artificial anus or urethra must necessarily have failed.—*Dublin Journal, Nov.*, 1833.

5. *The Anatomy and Physiology of the Liver*, by Francis Kiernan, Esq. M. R. C. S.—After giving a short account of the descriptions of Malpighi and other writers respecting the minute structure of the liver, the author proceeds to state the results of his own investigations on this subject. The hepatic veins, together with the lobules which surround them, resemble in their arrangement the branches and leaves of a tree; the substance of the lobules being disposed around the minute branches of the veins like the parenchyma of a leaf around its fibres. The hepatic veins may be divided into two classes; namely, those contained in the lobules, and those contained in canals formed by the lobules. The first class is composed of interlobular branches, one of which occupies the centre of each lobule, and receives the blood from a plexus formed in the lobule by the portal vein; and the second class of hepatic veins is composed of all those vessels contained in canals formed by the lobules, and including numerous small branches, as well as the large trunks terminating in the inferior cava. The external surface of every lobule is covered by an expansion of Glisson's capsule, by which it is connected to, as well as separated from, the contiguous lobules, and in which branches of the hepatic duct, portal veins, and hepatic artery, ramify. The ultimate branches of the hepatic artery terminate in the branches of the portal vein, where the blood they respectively contain is mixed together, and from which mixed blood the bile is secreted by the lobules, and conveyed away by the hepatic ducts which accompany the portal veins in their principal ramifications. The remaining blood is returned to the heart by the hepatic veins, the beginnings of which occupy the centre of each lobule, and when collected into trunks pour their contents into the inferior cava. Hence the blood which has circulated through the liver, and has thereby lost its arterial character, is, in common with that which is returning from the other abdominal viscera, poured into the vena portæ, and contributes its share in furnishing materials for the biliary secretion. The paper is accompanied by numerous drawings of preparations made by the author, of the minute structure of the liver, in which the different sets of vessels and ducts were injected in various ways.

[*London Medical Gazette, Jan.* 1834.

6. *Respiratory Organs of the Leech*, by Geo. Newport, Esq.—The stomach of the leech has been hitherto described as a large elongated sac, simply divided into ten compartments by perforated membranous partitions; but the author, by a more accurate examination, finds that each portion of that organ is expanded into two lateral cæca, which increase both in size and in length as they are traced along the canal towards the pylorus. The cæca belonging to the tenth cavity are the longest, extending as far as the anus, and have themselves four constrictions; the cavity itself terminates in a funnel-shaped pylorus. When the posterior end of the animal is cut off, the cæcal portions of the stomach are laid open, and the blood which it receives flows out freely, as

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fast as it is swallowed; and hence the leech, under these circumstances, continues to suck for an indefinite time.

The respiratory organs consist of two series of pulmonary sacs, arranged along the under side of the body, on each side of the nervous cords and ganglia. They each open upon the surface of the body by a very minute but distinctly valvular orifice. The membrane which lines them appears to be continuous with the cuticle, and is exceedingly delicate and highly vascular, receiving the blood, for the purpose of its being aerated, from the veins of the system. The blood is returned from these sacs into the lateral serpentine vessels by vessels of a peculiar construction, passing transversely, and forming loops, which are situated between the cæca of the stomach, and which are studded by an immense number of small rounded bodies closely congregated together, and bearing a great resemblance to the structure of the venæ cavæ of cephalopodus mollusca. The purpose answered by this structure is involved in much obscurity; the author offers a conjecture that they may be analogous in their office to the mesenteric glands of the higher animals.

With a view to determine some circumstances relating to the mode of the respiration of the leech, the author made some experiments, by confining the animal in water deprived of air by boiling. After some time the leech was observed to give out bubbles of air; and the water of the vessel, when tested by lime-water, indicated the presence of carbonic acid.

The paper is accompanied by drawings of the structures described.

[*London Medical Gazette, Jan.* 1834.

PATHOLOGY.

7. *Encysted Abscess of the Cerebellum communicating outward.*—A SOLDIER, æt. 23, of a plethoric and healthy constitution, was admitted with the symptoms, which had suddenly come on; active pyrexia, severe headache, stupor, hard vibrating pulse, &c. The left parotid was swollen and inflamed. Active depletions speedily restored him; and all that he complained of was a deep seated pain in the left ear, accompanied with tinnitus. Blisters and other topical means were tried, but to no purpose; he, therefore, left the hospital, but soon returned, when, in addition to the otalgia, there was a swelling of the meatus externus, and he was tormented with headache. By cupping, antimonial ointment, &c. he was relieved, and enjoyed a respite for several days, but it was only a respite, for his distresses soon came back, worse than ever; the headache was accompanied with violent pulsations, and a feeling of burning heat; the patient was feverish and watchful, and the integuments over the squamous bone were puffy and inflamed; leeches were applied to the inside of the nostril with considerable benefit, still there was the beating pain in the head, which at stated periods became much exacerbated. For about six days he was tolerably easy, but this deceitful calm was soon followed by another attack of sufferings, the swelling of the integuments had now increased, and pressure with the finger caused pain and left a pit.

These alternations of sufferings and relief, the distressing headache, which never altogether left the poor patient, and the immunity of the intellectual faculties led Dr. Scalvanti, of Pisa, (the narrator of the case) to predict disease of the cerebellum, according to the opinion announced by Lallemand, in his Anatomical and Physiological Researches. A doubt existed, whether the cerebellum was primarily diseased, or subsequently to a disease of the internal ear. However this might be, the man became worse, in spite of occasional intervals of a few days' ease; each attack was now severe and alarming; he became almost quite deaf and stupid, and the external swelling extended along the parietal and occipital bones. A surgeon, who was called in consultation, recommended an incision upon the mastiod process. He considered that the disease was altogether external, and that no suppuration of the cerebellum could have taken place, because there was no symptoms of com-

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pression, and the intellect was little impaired. He was not aware of the results of Lallemand's researches. The incision was made, and the bone laid bare, but no appearance of disease was to be seen; the lips of the wound, however, were kept apart. The result seemed at first very gratifying; the headache and deafness were surprisingly relieved, and the external swelling much reduced. His physiognomy, however, became more stupid, and his speech betrayed a wavering state of mind. It is to be observed, that, during the intervals of ease, his appetite was always vigorous; unfortunately for himself he, on one occasion, had indulged to excess; he was seized with obstinate vomiting, became paralytic, and died on the 29th of June.

Dissection.—On cutting down to the bone, the temporal muscle was found to be healthy, the pericranium was somewhat thickened, and a spoonful of pus was found underneath it, between the squamous and zygomatic portions of the os temporis; a hole penetrated right through the bone, just above the meatus auditorius externus. The membranes of the brain were highly injected; that portion of the left hemisphere, which occupies the middle and lateral fossa of the basis cranii, was very considerably increased in volume; the cerebral anfractuosities had disappeared, and the cerebral substance was unusually resistent and elastic; the dura mater was perforated opposite to the hole through the bone. Upon opening the lateral ventricles, it was observed that the left one was sensibly diminished in capacity, and right beneath it a sac, or cavity, of the size of a hen's egg, was found; the medullary substance had been wasted away, so that the boundaries of the sac were formed by the cortical, or grey portion, it terminated outwardly in a funnel-shaped prolongation, which communicated, by the previously mentioned apertures through the dura mater and the bone, with the abscess under the pericranium. The walls of the sac had a fibrous appearance, and altogether resembled an inflamed mucous membrane. The rest of the encephalon was normal.

[*London Medical and Surgical Journal, Dec.* 1833.

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8. *A Case in which a common Earthenware Egg-cup was found in the small Intestines.*—Mr. Dendy brought before the notice of the Medical Society of London, the following singular case:—a man, aged 60, came into the Christ church work-house, with scrotal hernia, which had existed thirty-five years, but was partially reducible. He had been for some time subject to repeated attacks of chronic diarrhœa and dysentery, and ten weeks previous to his death he had diffused peritonitis. About three weeks previous to that event he was seized with stercoraceous vomiting, and the taxis was applied, but was not perfectly successful, as a small tumor still remained, similar in appearance to a knuckle of intestine. The symptoms continued, and on the 4th of December he died.

About twelve hours after death, Mr. Dendy, in the presence of Mr. Stevens and Mr. Brown, proceeded to examine the body. The stomach appeared to have suffered from inflammation, and the pyloric orifice could be distended with the greatest facility; the small intestines were matted together, and their coats were so attenuated, that they formed a perfectly diaphanous membrane. The ileum was of a purple color, and marked in some places with little patches of ulceration; in the interior of this intestine, about ten inches from the ileo-colic valve, was found a common sized earthenware egg-cup, resting upon the lumbar vertebræ, near the posterior superior part of the crest of the ileum; the mouth of the cup was in the direction onwards, towards the large intestines, and its interior was stained of a black color. No portion of intestine was found in the hernial sac, but there was a chocolate-colored fluid, similar in appearance to decomposed intestine in it. The ileo-colic valve was perfectly healthy, and of its natural size; and, although the colon and rectum were traced throughout their whole course, no marks of disease could be discovered; the cæcum was found full of scybala. The deceased had been much addicted to drinking, but had never exhibited any symptoms of insanity; nor did Mr. Dendy, from any part of the man's conduct, although he had been

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under his observation some time, expect to find such a source of disease. He was of opinion that, from the healthy state of the large intestines and the valve, and the diseased condition of the smaller ones, that the cup must have passed by the mouth. The portion of intestine which had formed the hernia was below the cup.

Mr. Salmon could not think that this body had passed the pylorus; it would probably have suffocated the man. He had, however, seen many instances where patients had confessed to having passed foreign substances through the anus: it might by possibility pass the valve of the colon, but could not, in his opinion, pass by the mouth.

Mr. Stevens thought that if the cup had entered into the stomach, it might with facility pass the pyloric valve, which was so unusually large: the state of the intestine led him to suppose that it had passed in this way.

Mr. Hooper mentioned a case which occured at St. Bartholomew's Hospital, in which a six ounce bottle had been passed into the rectum. Mr. Lawrence was sent for, and on his arrival proceeded to dilate the anus with his fingers, and finally succeeded in extracting the foreign body.

Dr. Ryan remarked, that if this man were subject to delirium tremens or melancholy, he considered it probable that he might have swallowed the egg-cup when his mind was much affected. He mentioned the circumstance of Gosse, of Geneva, having swallowed metallic balls of two inches and a half in diameter.

Mr. Headland made some remarks as to the fact, that the egg-cup was not acted on by the gastric fluid.

Dr. Severn observed that the cup was made of silex, which was not soluble in the strongest acids, and it was then glazed with cobalt with the same intention.

Mr. Kingdon said that he had seen a man nearly killed by swallowing a shilling, but that eventually it passed by the rectum.

Dr. Ryan, Mr. Hooper, Mr. Dendy and Mr. Salmon, mentioned cases in which farthings, halfpence, pence, and sovereigns, were swallowed without having produced any bad effect.

Several other members spoke as to the probability or improbability of the cup having passed by the mouth, after which the Society adjourned until next Monday.—*London Medical and Surgical Journal, Dec.* 1833.

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9. *Case of Tumor in the Region of the Liver, with discharge of Biliary Calculi through the parietes of the Abdomen.* By WILLIAM MACNISH, M.D. Surgeon, Edinburgh, late Surgeon 63d Regiment.—A lady, aged about 27, of delicate constitution, the mother of several children, after a residence of between two and three years in the West Indies, during which time she enjoyed tolerable health, when at Barbadoes in 1817, experienced an attack of acute *hepatitis.*

It commenced suddenly with sickness and vomiting, severe pain, tension, and fulness of the region of the liver, the pain greatly increased by pressure, and extending to the right shoulder. There was cough, with *dyspnœa,* and inability to lie on the left side; pulse frequent, with urgent thirst; furred tongue; and hot dry skin. By repeated bleedings, saline purgatives, blisters, and the exhibition of mercury so as to affect the mouth, the active character of the disease was in a short time subdued; but it was two months before the lady could leave her room, and then in a very debilitated state, and unable to walk upright.

Her convalescence proceeded slowly, and her state was altogether so unsatisfactory, that a return to Europe was deemed essential to her recovery. Circumstances, however, prevented her leaving Barbadoes till May 1818, when she sailed for England.

During the voyage her health improved considerably: but towards its termination, she began to complain of constant uneasiness in the region of the liver, in which there was an evident fulness, and some pain on pressure.

On her arrival in London, early in August, there was a visible tumor below

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the margin of the ribs, with considerable surrounding tumefaction, and so tender that she could not bear the least pressure of the fingers. Its surface was discolored in two places, at which it seemed probable the tumor would point. At the end of the month, however, there was no perceptible change.

September 15. The tumor had greatly decreased, the pain and tumefaction had subsided, and she could bear to have it freely examined. The discoloration was now confined to one spot, where there was an indistinct feeling of fluctuation. The tumor extended from the margin of the false ribs of the right side to within a couple of inches of the groin, the glands of which were enlarged and painful. Its greatest breadth was little more than two inches, it became narrower as it descended, and its termination was not more than an inch in breadth. It was irregular and hard: and so thin and superficial, that in grasping it the fingers could almost be made to meet behind it. At its upper part it adhered to the *parietes* of the *abdomen*, the remainder was attached and moveable. She complained of a sense of fulness or weight, and of occasional lancinating pains in it. Her appetite was weak, and her health considerably impaired.

It was agreed in consultation, that the tumor should be opened at the inflamed spot, and a tent introduced with the view of giving vent to any contained fluid, and establishing a drain.

September 20. Tumor opened; a small quantity of healthy looking *pus* followed the lancet, and more was obtained by pressure; but the discharge was altogether inconsiderable, and in a few days was little more than sufficient to moisten the tent, which was daily introduced. So rapid a diminution of the tumor now took place, that, by the 1st of November, it was not half its original size. On the 9th she complained of much pain in the tumor, nausea, headache, and other febrile symptoms, which continued with little abatement till the 15th, when, on withdrawing the tent, I was surprised to find a hard substance in the wound, which proved to be a gall stone, about the size of a nut. On the following morning another was discharged. A state of comparative ease now succeeded, and continued till the 25th, when there was a recurrence of the pain, followed (on the 29th) by the expulsion of another *calculus* and some fragments. Her health now improved daily; and, though the tumor for some time felt hard and painful on pressure, it was productive of little more discomfort than that occasioned by the daily renewal of the tent.

In March 1819, she was in the fifth month of pregnancy, though the menses had not appeared since she was first taken ill. As utero-gestation advanced, the liver became uneasy, and her general health suffered. On the 20th of May, she had a severe and lengthened shivering fit, succeeded by a most distressing hot stage and great debility. Premature labor followed.

A new train of symptoms now supervened. A fortnight after delivery she was seized with violent pain in the epigastric region extending to the back, directly under the *scapulæ*, and stretching down the left side, accompanied for the first time with universal yellowness of the skin. For two days the pain continued severe, and was succeeded on the third by a profuse discharge of a transparent glairy fluid, which, during the three days of its continuance, wetted a great many cloths. Twenty-three large towels were shown me, on most of which, though the fluid itself was perfectly colorless, a tinge of yellow or green remained.

From this period she experienced a succession of similar attacks; at intervals of from four to six weeks, the pain uniformly commencing in the *epigastrium*, extending to the back, and ceasing on the appearance of the discharge, which generally continued about forty-eight hours, but in decreasing quantities till March 1810, when the paroxysms, which had been gradually assuming a milder character, finally ceased. She then went to the country, and took much exercise in the open air. The change was productive of the best results. Her appetite returned, and she gained strength rapidly, and even became stout. She complained at times of uneasiness and sense of weight in the side; but these feelings were of short duration, and productive

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of little inconvenience. By the end of the year her health was re-established; and, with the exception of occasional slight dyspeptic attacks, has continued tolerably good since.

From the first appearance of the bilious hue to the cessation of the paroxysms, a period of ten months, the skin was more or less yellow, each successive attack being accompanied or succeeded by a deeper tinge.

In two only of the paroxysms was there any irritability of stomach. The appetite was always defective for some time before an attack, and the bowels were rather slow; but, until the skin became jaundiced, the evacuations, though often unhealthy, generally contained a fair proportion of bile.

The tent, which had been constantly in the side since September 1818, was in August 1821, withdrawn. Within a month after, the wound had completely cicatrized. I have no doubt the tent might have been removed with perfect safety at a much earlier period, but it was continued at the desire of the patient, who firmly believed that the healing of the wound would be followed by unpleasant consequences.

For a little space around the cicatrix, which is nearly two inches below the margin of the ribs, the liver is hard, and adherent to the abdominal *parietes*, and feels uncomfortable on pressure; but no vestige of the pendulous tumor can be discovered.

As to the treatment, it is unnecessary to say much. For the most part, it consisted of mercury in some form or other. Generally small doses of the blue pill, either alone, or when a purgative effect was required, in combination with the extract of colocynth. The nitro-muriatic acid bath was used for some time, seemingly with advantage. For the alleviation of the pain during the periodical attacks, various measures were resorted to, but the most successful were opiates in large doses, fomentations, and stimulating frictions. Light tonics, as the cascarilla or quassia, with the carbonate of soda, and infusion of rhubarb in such doses as to regulate the bowels, were in general use throughout the disease, and were very beneficial.

Note.—Of Biliary *Calculi* being discharged by suppurative ulceration of the abdominal *parietes*, many examples are now recorded.

In the *Ephemerides Nat. Curios.* by many authors, *passim*.

Tacconi in Commentar. Acad. Bonon. Vol. ii. p. 1. 1732.

Amyand in Phil. Trans. No. 449.

La Peyronie in Mem. de l'Acad. de la Chirurgie, i. p. 185. 1743; and Petit, Œuvres Port. Tome i. p. 320.

Wiscilen, Lipsiæ, 1742; apud Haller Dissert. Med. Pract. Tom. iii.

Petit, Œuvres Posthumes, Tome i. p. 323. Two cases exclusive of that of La Peyronie.

Guerin, Mem. de l'Acad. de Chirurgie, Tome iii. p. 470.

Commercium Norimb. 1743, p. 81.

Haller, *Opusc. Patholog. Obs.* 38, *Hist.* 8. 1767.

Hoffman, in Crell. Chemische Annalan, 1789. viii. St. p. 128.

Acrel published in 1718 at Upsal, a Dissertation on Gall-stones escaping by ulceration of the abdominal *parietes;* and Sandorff published in 1801 at Helmstadt, a Dissertation *de Cholelithis ex ulcere abdominis elapsis.*

Vogler, in Museum der Heilkunde, iv. Band, p. 91.

Buttner, Funf besondore Wahrnehmungen, &c.—by an abscess at the navel.

Bruckmann, in Horn's Archiv. 1810, p. 231, 144. Several gall-stones escaping successively by abscess.

Lastly, Mr. George White, lately of this city, informed me in May 1825, shortly after I had published the account of a large gall-stone discharged *per annum*, of one which produced first inflammation and suppuration, and then ulceration of the abdominal *parietes*, and was discharged, with recovery of the patient. D. C.

[*Edinburgh Med. and Surg. Journal, Jan.* 1824.

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10. *Tubercles developed in the origins of the third, fifth, seventh, and eighth nerves. Loss of Hearing, Sight, and Smell; Preservation of the Sense of Taste, and of the Sensibility of the Integuments of the Face, by* M. Nelatin. Feret, a girl, twenty-one years of age, was admitted into the Hôtel Dieu on the 10th of March; the immovable expression of her countenance, her pro-

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jecting and fixed eyes, and her slow manner of speaking, seemed to indicate idiotcy in this female. She complained of constant pain in the head; six years ago she commenced to experience these pains, and since that period the sense of hearing has gradually failed, and within three months she has lost the power of smell. The sensibility of the skin remained unaffected, both on the face and rest of the body. Voluntary motion was freely exercised on both sides with vigour; the sense of hearing was nearly lost; the voice, which had become feeble when she first entered the hospital, was soon lost altogether; when the point of a stylet was moved along the surface of the ocular conjunctiva, it did not excite the least mark of sensibility, although the membrane was dry, and evidently much inflamed. The whole surface of the nasal fossæ might also be touched with a stylet introduced into the nostril, without the patient being conscious of it; ammoniacal paste, when placed under the nostril, seemed at first to produce no effect, but in a few moments excited efforts to cough. The peculiar sense of the tongue was however unimpaired, for the patient recognized salt when placed in the mouth; the general sensibility of the tongue was also unaffected, and the gums were in a healthy condition. The patient died suddenly on the 3rd of May. On the examination of the body; the middle portion of the brain and the medulla oblongata were found to be much developed; and the olfactory and optic nerves did not present any morbid appearance during the whole course; the fourth pair of nerves, the external ocular motor of the left side; the glosso-pharyngeal and hypoglossal nerves seemed also free from any lesion; but all the other nerves of the brain were increased to at least three times their natural volume, small spheroidal tumours, of two or three lines in diameter, were developed in the interior of the nervous chords, or attached to their sides. Some of these tumours were perfectly well defined, though without cysts, and others were irregular in their forms. They were all formed by yellow opaque matter similar to that which is found in the centre of tubercles imperfectly softened, and the nerve itself suddenly contracted in size, after having traversed this tubercular mass. The two common motor nerves of the eye were implanted on the summit as a cone formed by this substance, which was also found in the fifth nerve on both sides, but at variable distances from their point of origin; a small tubercle, half a line in diameter, was attached to the origin of the external motor nerve of the right side, but the greater part of the nervous filaments passed above it, and were not altered. The seventh nerve was diseased from its origin to the bottom of the meatus auditorius internus; the pneumogastric nerve was also diseased in the same manner, for the extent of an inch below its exit from the foramen lacerum posterius; the optic and olfactory nerves did not present any morbid change of structure in their whole extent.

*** If our memory do not deceive us, it was a theory ingeniously advanced by the professor of anatomy in the University of Dublin, that the extremities of all the nerves of sense required to be joined by filaments from the fifth nerve, for the full exercise of their special functions; and upon this theory he ventured to predict that a connexion would one day be discovered between the retina and filaments of the fifth nerve. The present case seems to support, in some measure, the supposition advanced by Dr. Macartney. One of the most remarkable phenomena was the loss of smell and vision, while the olfactory and optic nerves were perfectly healthy, and the fifth nerve was diseased; we are not, therefore, to conclude, as Magendie has partly done, that the branches of the fifth are, more properly, nerves of sense than of sensibility, or that the optic nerve does not belong to vision, and the olfactory to smell. But, if we are not inclined to adopt the above theory, we may explain the loss of sense as some of the French writers would, who consider it indispensable that the general sensibility, which depends on the distribution of the branches of the fifth nerve, should be preserved complete, and that when this sensibility is altered, the parts to which the nerves pass become irritated, inflame, and no longer act as proper media for the exercise of the senses; thus, in the present case,

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the mucous membrane covering the eye was inflamed, ceased to secrete the mucus or fluid which keeps it moist in a state of health, and became unfit for the transmission of light. [*Lond. Lancet, Nov.* 1833.

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11. *Malformation. Absence of the Anus in a Young Female 22 years of age. Recto-vaginal canal; voluntary discharge of fecal matter by the Vulva; Absence of the Menses.* By M. Ricord, *Surgeon to the Venereal Hospital.*—The following interesting communication has been made to the editor of the *French Lancet*, by M. Ricord:—I was consulted fifteen days ago by a young girl of twenty-two years of age, who requested to be examined, saying that her lover accused her of having communicated to him a blennorrhagia, which was utterly impossible, as she never had connexion with any other person; she also asserted that she was not made like other women, and begged me in consequence to pay a little more attention than common to her case. Having been frequently consulted by many females on pretended deformities, which consist in nothing more than a slight prolongation perhaps of one nympha, or of the caruncule myrtiformes, I am not in the habit of attaching much importance to their stories on this subject. The external genital organs did not present anything remarkable or morbid, and the speculum was immediately introduced with facility. The parts which embraced its extremity were perfectly healthy, and did not offer anything abnormal or morbid to the eye. However the depth to which the instrument was carried without meeting the neck of the uterus began to excite some astonishment, when a lump of fecal matter was brought into view, simulating to the touch the os uteri, and also some grape seeds, which were at first taken for vegetations. Being now convinced that some malformation existed, as the girl had at first mentioned, M. Ricord examined the organs of generation with the greatest care, and found the parts in the following state: the labia majora and minora, the clitoris and its prepuce were of the regular size, and well formed; the meatus urinarius was placed in its accustomed situation, and did not offer any thing particular; the posterior commissure of the vulva and the fourchette were also in the normal state; but on examining the perineum, we could discover no trace of anus; the place which the orifice should naturally occupy was marked by a brown spot, irregularly radiated, about the size of a shilling, and without any hair, although the mons veneris and vulva were overshadowed with great abundance of this material. The ring of the vulva, which did not present any caruncule myrtiformes, was furnished with eccentric folds formed by the mucous membrane, and enjoyed a certain power of contraction much less than that of the sphincter ani, but much more powerful than that of the common constrictors of the lower part of the vagina. Beyond this vulvar ring the finger penetrated without causing any uneasiness into a kind of canal, which from its situation and functions deserved the name of rectovaginal. The speculum, which did not produce the least pain when introduced, exposed to the view a mucous membrane, deprived of those transverse ridges so commonly found in the vagina; and when pushed on to its full length without meeting the least prominence or line of demarcation, it was arrested by fecal matter. When a finger was placed in this canal, while a female sound was introduced through the uretha into the bladder, nothing was felt between them except a septum, which might be compared to the utero-vaginal wall. The toucher, exercised in every possible direction, and the speculum introduced to the greatest depth the instrument would permit, did not discover the least trace of a uterus. Upon questioning the woman with respect to the process of defecation, menstruation, and sexual intercourse, M. Ricord discovered the following particulars; the fecal matter was always passed by the vulva, and was perfectly under the command of volition, but gaseous fluids often escaped involuntarily: when the fecal matter presented itself at the orifice of the vulvar ring, she felt a desire to go to stool, and when this desire was satisfied, the finger intr duced as deeply as possible, no longer met with any obstacle; the female besides has always taken care to use an injection immediately after, and to wash herself well, by which precaution she always kept her-

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self clean. Menstruation has never made its appearance under any form, and no trace of blood has ever been discovered by her in the urine or feces. Although she has lived for three years with the same man, the latter has never appeared to have suspected or known the existence of any malformation; the first sexual intercourse which she had was not accompanied with any pain, for there never was any hymen to break, and the construction of the vulvar ring was feeble in this young woman. She feels the desire of sexual intercourse; however, she says, that according to the account she received from her female friends, her own desires are less strong, and her enjoyment not so great as in others of her sex. Finally, this girl is tall, slender, well made, her form and physiognomy are those of a female; the bosom is well developed, and has never experienced since the age of puberty any sudden change of volume, her voice is soft and sweet like that of a female. Before we terminate this observation, the practical and moral consequences of which may be readily deduced, we may notice that in three days this young female, who was not ill at the time of her first visit, returned with a urethral blennorrhagia, without any affection of the vulva or recto-vaginal canal.—*Lond. Lancet, Nov.* 1833.

12. *Case of the Discharge of a Dead Fœtus from a Fistulous Opening near the Umbilicus.*—A woman was received into the Cork-st. Fever Hospital in 1828, with considerable enlargement of the abdomen. Her history, as far as it could be learned, was, that eight years before she had been in labour, which, after continuing for two days, suddenly ceased, and the child, as she expressed herself, rose up into her stomach: no delivery followed. After remaining in bad health for about two years, she again experienced the symptoms of pregnancy, and gave birth to a child, which did not survive; but the former child still remained in the cavity of the belly, and during its continuance there she bore three children, the last of whom lived. Ultimately a fistulous opening formed near the umbilicus, which was enlarged, and the original child removed; it was in a wonderful preservation, measured twenty-two inches in length, and had attached to it about two feet of the umbilical cord.—*Med. Chir. Review, Jan'y.*

13. *Enormous Steatomatous enlargement of the Uterus weighing* 21 *pounds.* A woman, aged 34, soon after her confinement with a first child, observed a swelling of the hypogastrium, attended with occasional pain, and with complete amenorrhœa.

The swelling continued to increase for six years, during which the catamenia were not seen; she supposed at first that she was pregnant; but she soon found it otherwise. Upon examining the abdomen, the tumour felt unequal and knotty on its surface, and it was painful when pressed with the finger; there was no symptom of tympanities, or of ascites present; the os uteri was found per vaginam, to be round, and but little open; the body of the organ was indurated and weighty. Every four weeks the abdomen was puffed up more than at other times, and a mucous discharge escaped from the vagina. Her health became worse and worse, and she lingered out a miserable life of pain for eleven years. Shortly before her death a distinct fluctuation was felt under the skin of the hypogastrium; a trocar was pushed in, and a large quantity of bloody serum flowed out.

Dissection. Upon turning back the omentum, an enormously enlarged uterus came into view; when separated from its connexions, it weighed 21 lbs. [civil weight.] The anterior surface of the organ was studded with upwards of twenty fatty growths, some small, but others as large as a man's fist. They were covered with the peritoneal coat of the uterus; when cut open they presented a beautifully smooth fatty appearance, like that of the finest tallow. The posterior surface was of a white colour; and when the substance was divided, it was found to be firm in texture, and about an inch thick in every part. The cavity of the uterus was filled with a brown-coloured substance, of a confused fibrous texture; its orifice was round and but little open, and a gelatinous mucus flowed from it; the ovaria were indurated; the other viscera were sufficiently normal in structure, although somewhat displaced by the enlarged womb.—*Graefe and Walther's Journal.—Ibid.*

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THERAPEUTICS.

14. *On the efficacy of the Secale Cornutum in Leucorrhœa.* By G. Negri, M.D.—On the employment of the secale cornutum, and on its efficacy on leucorrhœa we shall limit ourselves to some general remarks, which are the result of our experience on this subject, without entering into any detail of the singular cases which occurred under our observation.

Although the secale cornutum will be found one of the most valuable remedies in the simple form of leucorrhœa, even of a very long standing, and which have resisted many other means, still its efficacy in this kind of diseases is not so rapid as in hæmorrhages. This would have been almost expected as a matter of course, from the more chronic character of the former complaint. Therefore we found it more convenient, and we may say even more safe, to give it in small doses, as five or six grains two or three times a day, rather than in larger and more frequently repeated ones. Thus the remedy may be continued for a long period without any inconvenience, and with regular advantage. In leucorrhœa as in menorrhagia, we must remember, that the ergot of rye has also a peculiar power over the fibrous texture of the womb, and that pains and spasmodic contractions of this organ may be induced, and then symptoms of metritis, and even an increased discharge, may eventually take place. Then it is of the utmost importance, in leucorrhœa also, to allay any state of inflammation, or of local irritation, by those therapeutical means, which may be required by the particular symptoms of each case, before we have recourse to the secale cornutum.

We find in practicing, that some patients could not take at first any dose of this remedy without severe pains being induced in the uterine system, when, after having used other remedies for a certain time, they could take the secale again without the least inconvenience, but, on the contrary, with a decided and progressive advantage on their general state of health.

In one of these patients the os uteri was partially open and indurated, and very tender on the left side of its margin: when the finger pressed over this point, acute pains were excited, darting from that part to the right iliac region. We used in this case the extract of conium with the sulphate of iron, with great benefit, and after this morbid sensibility was subdued, we gave again the secale cornutum for the remaining leucorrhœa with decided benefit, and without any more inconvenience, although continued for a long time. We have lately seen this patient, and her general state of health has wonderfully improved; she feels a great deal stronger, and the white discharge is almost entirely gone; we confidently expect to see her in a short time cured by the ergot of rye, which now she only takes twice a day.

Out of ten cases of leucorrhœa, of which we kept regular notes, the ergot of rye has failed in three. But, in all probability, that happened more from want of experience in the judicious employment of the remedy rather than from its inefficacy.

Of these three unsuccessful cases, two were cured afterwards by other remedies; but one had never been permanently well, either by the ergot of rye or by any other means employed for a long time, both by ourselves and several other practitioners. In this singular case, the secale cornutum appeared to have induced once menorrhagia, after which the patient was better from the white discharge for a little while. Amongst the other things we tried repeatedly the injection of nitrate of silver, as recommended by Dr. Jewel, but without any good effect, and as it appeared to this gentleman very extraordinary, we recommended her to the doctor himself, but we do not know the result.

The secale cornutum has been successfully employed in leucorrhœa by our colleagues at the St. John's Dispensary, and our friend Dr. Ryan has even used it in private practice with the greatest advantage.

On the effects of the Secale Cornutum in Gonorrhœa.—About the modus operandi of the secale cornutum in the above classes of diseases, Dr. Spajrani expressed his opinion in the following way, leaving however this subject for subsequent

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inquiries. "I am," says he, "rather inclined to believe, that this remedy does not act either as an astringent, or as a stimulant, but more as a sedative on the capillary vessels, and for this reason it may be conveniently used in *certain* instances of active hæmorrhage and of vascular congestion, where exists a state *approaching very much to inflammation;* but yet *it is not to be used* in instances where some *acute inflammation is present,* for which stronger means must be employed."

With the view of ascertaining these therapeutical principles, and from the advantage already obtained by the ergot of rye in leucorrhœa, we thought we should not incur any great risk by trying it also in gonorrhœa, at first in females and then, if not injurious, in males. It is true that the preternatural secretion of the mucous membrane of the genital organs in gonorrhœa, is induced by a specific virus, but still we readily believe that its essential pathological character is inflammatory. Therefore no better opportunity could be obtained for ascertaining the supposed modus operandi of the secale cornutum, than to use it in a disease of acknowledged character, and in which we could actually see the effects which might be induced by it.

The following cases will give an idea of the result of our inquiries on this subject.

Case I.—Mary C., married, admitted to St. John's Dispensary on the 9th of May, 1833. She has been ill with gonorrhœa for about three weeks; she caught the disease from her husband, and had been under our care some months ago for a similar complaint, induced by the same cause. She complains of shooting pains through her womb and loins, with ardor urinæ. She has been regular three weeks ago, and has never been subject to leucorrhœa. An opening medicine was ordered, and she was directed to take afterwards six grains of the secale three times a day.

May 13th. She is a great deal better; has now no discharge; had no giddiness, but only pains in the lower part of the abdomen, and a kind of cramp of the womb; feels still pain in making water. The same powders to be taken only night and morning.

20th. No discharge; complains still of shooting pains in the womb; secale suspended, and only some supertartrate of potash to be taken as an imperial drink. On the 29th she was taken unwell, but the catamenial discharge was very scanty and pale, after which, on the sixth of June, had a slight return of the discharge, which was gradually arrested by the secale in moderate doses. She was discharged cured on the 25th of July.

Case II.—Mary Anne C., æt.; 26, single, admitted on the 9th of May, 1833. Has had gonorrhœa for nearly two months; has not been regular for several months, and has been subject to leucorrhœa; bowels regular. Six grains of the ergot of rye were ordered to be taken every four hours.

13th. The discharge ceased after having taken four or five powders, and has not returned since: proved no inconvenience by taking her powders. They were ordered to be taken only night and morning.

30th. She menstruated on the previous day, and was left without medicine.

June 6th. Has no discharge at all, and says she is quite well. Discharged cured.

Case III.—Harriet R., æt. 27, married, admitted on the 20th of May, 1833. Has had gonorrhœa four years ago, from which she was perfectly cured. She was taken ill again with the same complaint, caught from her husband about ten weeks ago, for which she has been treated, as an out patient at St. Bartholomew's Hospital, under Mr. Lawrence. Balsamic medicines and mercurial pills were given to her, from which she was much relieved. Now the discharge is thin and white, when before it was yellow and thick. Complains still of some starting pains through the womb, but has less pain in making water; complains of pain in her right leg, where there is inflammation of the periosteum on the shin bone, probably of a syphilitic character; her bowels being costive, a cathartic powder was ordered, and five grains of the secale cornutum, to be taken every four hours, beginning the following morning.

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23d. The discharge is less; she feels sick, after having taken her powder, and complains of being very weak.—Pergat.

30th. The discharge is less than the preceding day of attendance; she has now no pain in making water, but continues to feel sick after taking the powder; has had no giddiness. Continue the powder three times a day.

June 6th. The discharge has ceased. The secale was suspended, and the mercurial treatment was adopted for what we thought a syphilitic complaint.

Case IV.—John F., æt. 40, a baker, admitted on the 21st of June, 1833.

Has had gonorrhœa about six times; it usually resisted every remedy, and once he had it for nine months; now he has had gonorrhœa for about three weeks; has great pain and scalding in making water, and generally some drops of blood follow; has a great deal of discharge, and the orifice of the urethra is reddened and swollen; in the night he has painful erections. Five grains of the secale cornutum to be taken every four hours.

22d. We saw again the patient. He has taken five powders; the discharge is not abated, but he thinks he has less pain in making water.—Pergat.

28th. He has taken about sixteen powders; he has no pain in making water; he has had still painful erection at night, but the orifice of the urethra is a great deal less red, and the discharge is considerably abated; he has now no inconvenience, except a very slight feeling of warmth in making water. He continued the medicine in ten grain doses in every four hours, until the 11th of July, when he was nearly well, and requested to be discharged.

The patient was under Dr. Ryan's care, and was repeatedly seen by ourselves and colleagues.

Case V.—William M., æt. 24, admitted on the 22d of August, 1833.

Has had gonorrhœa about twelve months ago; has now been ill, for the second time, with the same complaint for a fortnight; discharge copious, yellow and thick. Five grains of the secale cornutum to be taken every three hours.

26th. Is just the same, but does not feel worse.—Pergat.

September 2d. He is a great deal better.—Pergat.

12th. Discharge scarcely perceptible. Continue the powders, but only one, three times a day.

16th. Discharge almost gone.—Pergat.

He went on taking his powders till the 10th of October, when he asked for another dose of them, to be taken night and morning, having still some little discharge only in the morning. This patient who was very attentive, and appeared much satisfied with his powders, having not returned, we have good reason to believe he is now doing well.

Case VI.—Wm S., æt. 28, admitted on the 4th of September, 1833. Was taken ill with gonorrhœa a week ago; feels great pain in making water; discharge copious, yellow and thick.

℞. Pulv. secalis cornuti gr. v. 3a. q. h. s.

16th. Discharge thinner; pain in making water gone.—Pergat.

23d. Discharge increased; secale suspended, and prescribed the mistura balsamica.

October 7th. Discharged cured.

Case VII.—Only a few days ago we had in private practice a patient affected by gonorrhœa for the first time. The symptoms were not severe; the discharge moderate. Being an individual of a delicate constitution, and of very regular habit, we expected to do some good in this case with secale cornutum. Three grains of Battley's extract were ordered to be taken every three hours. The following day the discharge appeared a great deal less, and the remedy was continued. Two days afterwards the discharge increased, as well as the ardor urinæ, and he had painful nocturnal erections. The remedy was brought to five grains every three hours, but was soon afterwards suspended, and other means adopted. In this case the secale cornutum certainly increased the severity of the symptoms; and the discharge which was moderate at first, and thin, became afterwards, copious, thick, and sometimes tinged with blood. The pulse was also feverish and sharp, the skin warmer than naturally. This patient is usually

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of a costive habit, but has great aversion to take purgatives, had we used them previously, or simultaneously with the secale, we could perhaps have obtained a better result. This was necessarily done after we had resorted to the other usual means generally employed for that complaint.

SHORT NOTES OF CASES BY DR. RYAN.

CASE VIII.—"M. M., æt. 22, married, has contracted gonorrhœa from her husband; became a patient under my care at St. John's Dispensary, Sept. 12th, 1833. Is two months ill. She was ordered 3 iss of secale, in twelve powders, one to be taken three times a day.

"16th. Discharge nearly gone. To continue.

"23d. Discharge has entirely ceased."

CASE IX.—"Charles C., æt. 22, has suffered from gleet for six months. Commenced the secale Sept. 17th, 1833, and on the 23d was nearly well. He has taken a variety of medicines, but nothing stopped the discharge so rapidly as the powders."

CASE X.—"G. S. æt. 34, has been six months affected with gleet. Commenced the secale Oct. 30th, 1833. Took fourteen powders, without any benefit. This was a morning patient, and had the medicine of a druggist, which, perhaps, was bad."

CASE XI.—"A. B., æt. 34, has suffered from gleet for eight months. He was cured by twelve doses of the secale cornutum."

CASE XII.—"J. A. L., æt. 19, applied to me Nov. 5th, 1833. Has gonorrhœa for the first time; symptoms severe. Ordered the secale.

"8th. Discharge more copious; ardor urinæ severe.—Secale omitted.

"Ordered carbonate of soda in barley water or linseed tea.

"In this case I did not expect much benefit from the secale, but was resolved to try it. Every medical practitioner is aware, that a first gonorrhœa is much more severe and indomitable than when the patient has had the disease frequently, or when the acute symptoms have ceased. But as I have known cubebs repeatedly arrest gonorrhœa in the acute stage, I saw no objection to employ the secale cornutum."

From the above facts it appears to us quite evident, that the secale cornutum has a peculiar action on the mucous membranes; but if exhibited when there is a state of acute inflammation, their morbid secretion may be considerably increased. On the contrary, when a more chronic form of inflammation exists, the secale cornutum may have a beneficial influence in arresting their preternatural discharge.

These deductions being in perfect accordance with what has been already remarked on the efficacy of the ergot of rye in hemorrhages and leucorrhœa, we think Dr. Spajrani's assertions on this point pretty correct. If any sedative or anti-stimulant property on the capillary vessels of the mucous membrane may be ascribed to the secale cornutum, as Dr. Spajrani is inclined to believe, we do not know. It is true, that in case IV. of gonorrhœa, where did exist redness and swelling round the orifice of the urethra, this appearance subsided under the influence of the secale; and that, in some instances of hemorrhage, the patients were complaining of great general prostration and faintness; but others, on the contrary, felt stronger, and their pulse appeared to us more excited; when, in cases VII. and XII. of gonorrhœa, the inflammatory symptoms were considerably increased. Are some of the former symptoms to be ascribed to the narcotic influence on the nervous system, rather than to any real sedative property of this remedy? We are inclined to believe so. We were much pleased in finding out that MM. Trousseau and Maisonneuve are of the same opinion on this point. (See *Lancet, March 30th*, 1833.)

Now, to give a more satisfactory idea of our results on the employment of the secale cornutum in hemorrhage and leucorrhœa, we put down all the different instances of both in the following

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***Tabular Form** indicating the result of all the Cases of Hemorrhages and Leucorrhœa which came under our observation, from the 16th of April, 1832, to the 4th of November, 1833, and were treated with the Secale Cornutem.*

Different Forms of the Disease.	Total number of Cases.	Successful Cases.	Unsuccessful Cases.	Remarks.
Menorrhagia.	12	8	4	* We include in the whole number the cases treated by Dr. Macmichael, at the Middlesex Hospital. † We put down as an unsuccessful case the first attack of the disease of Elizabeth Pilcher (case VI.) although in the second, the secale turned out very beneficial when given in proper doses.
Hemorrhage from the rectum.	2	2	—	
Hæmatemesis.	4*	3	1†	
Epistaxis.	1	1	—	
Hæmoptoe.	1	1	—	
Leucorrhœa.	10	7	3	
Total.	30	22	8	

Note.—We did not put down in this table the cases of gonorrhœa because they were related merely to show the effects, and not the efficacy, of the secale cornutum on that disease. All we can say, from the limited number of observations on this subject, is, that perhaps the ergot of rye may be found of some service in the more chronic form of that disease.

Of the unsuccessful cases of menorrhagia, the first was a woman who had a copious loss of blood from the vagina, with great tenderness at the lower part of the abdomen, and pains round the groins and loins. Her pulse was such as would have induced us to bleed her, had we not wished to try the secale cornutum in this case, which was the second that had come under our observation, since we began to employ this remedy. Five grains of the secale were ordered to be taken three times a day. The powders were taken for two days, and the pains and loss of blood were considerably increased. They were suspended; she was bled from the arm, and astringent medicines were ordered, which cured her very soon. This unfavorable result led us to adopt another method of practice in the following case (the second related to the society,) which succeeded very well, viz: to bleed first, then to give the secale.

The second was a stout woman who at her regular period was taken ill, but the bloody discharge was very profuse, and went on more or less for nine weeks. Had great pain at the lower part of the abdomen, and round her loins. Her pulse appeared weak. Five grains of the secale were ordered to be taken every second hour. Three days afterwards she was not better, and felt an increase of the pains after taking her powders. Her pulse was stronger. She stated having had a miscarriage about three months ago. She was bled, and directed to take the secale only three times a day, from which she felt worse, and was then suspended, and other means adopted.

The third case was that of Sarah Jones, æt. 33, married, admitted September 2nd, 1833.

Has had five children and miscarried twice, the second time five weeks ago, when she lost a great deal of blood. Three weeks afterwards, finding herself better, started for some place in the country, and came home to London, a distance of eighty miles. She was taken ill again on her journey, and lost a great deal of blood. She continued so more or less till August 31st. On the 1st of September the hemorrhage became very violent, and she came to our dispensary the following day, and was under our care. She does not complain of any great pains but in her left iliac region and loins; her complexion is very pale, and there is great action of the heart and arteries, but her pulse is certainly weak and empty; her head feels heavy; her bowels are costive.

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℞. Pulv. secalis cornuti, ʒ iij;
Divide in pulv. xxiv;
Pulv. i. 3a, q. h. sumend.;

viz. about vij. grains every three hours. A mixture with a drachm of carbonate of magnesia and two scruples of rhubarb in six ounces of water, was also given, a wineglassful of which to be taken every night, or night and morning, if her bowels were not open.

September 5th. She was sick, and vomited twice after taking the first powders but felt only a sense of sickness afterwards at each time she took her powders. Had some giddiness, but the pains in her loins and side were relieved. The bloody discharge is reduced very much, and she states that it was so soon after having taken a few powders. Bowels regularly open. Soon after having taken a powder she feels "*a general sense of weakness all over, from the head to the tips of her fingers and toes, as she could not stand; then she feels sick.*" Action of the heart and arteries less violent. Pulse more natural and soft. The mixture to be continued, and the powders to be taken only every five hours.

September 12th. She is better; discharge a great deal diminished, and less colored. The powders continued to make her sick and weak. Continue with the powders.

16th. Feels very sick with her powders. Discharge a great deal increased; but she thinks *her time to be unwell is very near*. The secale was discontinued, and she was gradually doing well under the use of the following pills:

℞. Ferri sulphatis, gr. i;
Extract. rhei, gr. iij;
M. f. pil. ter die sumend.

These pills were continued till the 7th of October, when she was discharged cured. Under these remedies the palpitation of the heart, and the excessive arterial action were reduced to their natural standard, and the patient got very soon better from that sense of general prostration, of which she so much complained before.

Although we put down this with the *unsuccessful cases*, still we thought that properly speaking, it should not have been considered entirely so, for the hæmorrhage increased in consequence of her having taken the secale when near menstruation. This was the reason which induced us to say in another place, that "only in two or *three* cases of menorrhagia, the loss of blood, &c., were remarkably increased by the action of the remedy."

The fourth unsuccessful case of menorrhagia is that of Mary Ann May, æt. 22, married, admitted the 4th of November, 1833. She had miscarried a short time ago, and was laboring under profuse menorrhagia for several days; was complaining of pains in the lower part of the abdomen and loins. She is a thin and delicate looking woman; her pulse appeared to us rather weak. Five grains of the secale cornutum were ordered to be taken every two or three hours.

Nov. 7th. She has been a great deal worse. The hæmorrhage increased very much, with spasmodic pains in the hypogastric region, and had giddiness, and pains along her thighs and legs. She took only six powders, and as soon as she left them off, the pains decreased. Her pulse was quick, and sharp, but empty. Her bowels are rather costive. The following mixture was ordered:

℞. Magnesiæ sulphatis ℥ j;
Antimonii tartarisati, gr. ij;
Aquæ fontis, ℥ viij;
M. Cyath. parvul. i. bis terve die sumend.

21st. After the first glass of her medicine, she vomited several times, after which the hæmorrhage suddenly ceased, and she felt a great deal better; this was the reason she did not attend regularly. Now the hæmorrhage returns a little if she has to exert herself too much. The secale cornutum was ordered again to be taken only two or three times a day.

25th. The hæmorrhage *entirely ceased* last Thursday evening (Nov. 21st) after having taken one of her powders, which she continued taking till to-day.

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She felt some pain in the lower part of the abdomen, but a great deal less than at the time she took them.*

In using the secale cornutum we preferred to give it in powder, as Doctor Spajrani did, being also the most economical and convenient way in dispensary practice.

Tabular Epitome of all the Cases of Hæmorrhage and Leucorrhœa which came to our knowledge, since Dr. Spajrani's publication, cured by the Secale Cornutum by different Practitioners in Italy, France, and England.

Where, and by whom treated.	Total number of cases.	Different kinds of Hæmorhages. From the Womb.	From the Nose.	From the Chest.	From the Bladder.	From the Stomach.	From the Rectum.	From the Gums.	Leucorrhœa.	Where published or recorded
In Italy.										
Dr. Spajrani .	17	8‡	2	5		—	—	—	not† stated	Omedei's Annali di Medicina e Chirurgia for Mar. 1830. Lancet, Feb. 5, 1831.
Dr. Pignacca .	4	2	—	2	—	—	—	—	—	Do. Number for May and June, 1830. Lancet, do.
Dr. Gabini .	7	3	2	1	—	1	—	—	—	Do. Number for February and March, 1831.
Dr. Bazzoni .	8	—	—	—	—	—	—	—	8	Do do.
In France.										
MM. Trousseaux et Maisoneuve	13	13	—	—	—	—	—	—	—	Bulletin Général de Therapeutique. Lancet, March 30, 1833.
England.										
Dr. Marshall Hall	1		—	—	—	—	—	—	not stated	London Medical and Physical Journal for March, 1829.
Dr. Lanyon .	1	—	—	1	—	—	—	—	—	Lancet, for March 13, 1833.
Mr. Bright .	1	1	—	—	—	—	—	—	—	Do. for April 13, 1833.
Mr. H.A. O'Slea	not‡ stated									Do. do.
Dr. Macmichael	1	—	—	—	—	1	—	—	—	Dr. Negri's Paper. (See Case vii.)
Dr. Negri . .	21	8	1	1	—	2	2	—	7	Do.
Mr. E. Nettlefold	2	—	—	2	—	—	—	—	—	Do. Case xii. xiii.
Dr. Ryan . .	2	1	—	—	—	—	—	1	not stated	Do. Case xiv. xv.
Totals	78	37	5	12	2	4	2	1	15	

‡ Employed the Secale in Hæmorrhages for the last two years "with invariable success."

† We mean those who have used it successfully in this disease, but the number was not stated.

* This case, which came under our observation some time after we had written the first part of this paper, was not there mentioned. We have put it then amongst the unsuccessful cases, although it was only from our injudicious employment, and not from inefficacy of the remedy, that the hæmorrhage had not been arrested at first.

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We seldom ordered it in more than five or six grain doses, more or less frequently repeated according to the violence of the case, or the peculiarity of the concomitant symptoms. We *purposely avoided* giving the secale intermixt with other medicine; but we were obliged sometimes to modify by other means the morbid condition of those parts or organs over which our remedy had to exert its powerful action; when at other times it was necessary to get clear of these irritating causes, which would have counteracted its beneficial influence; as, for example, the employment of purgatives when the bowels were costive. This, however, can never be an objection to our practice, as that *must* be always the case with the administration of any other remedies, which are given with a peculiar object. Although the criterion of the *post hoc, ergo propter hoc*, be not always correct, still we believe that in our profession, when violent symptoms are present, and we employ remedies of acknowledged activity, with the view of curing them, if we obtain a favourable and constant result for a sufficient number of times, we may begin to believe that criterion sufficiently correct. The weight of such a conclusion is moreover increased by the uniformity of results obtained by different individuals, and in different countries; therefore the following prospective view of the general results of the secale cornutum in hæmorrhages and leucorrhœa, will make a striking impression of the real efficacy of that remedy against those classes of diseases.—

[*London Med. and Sur. Journal.*

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15. *Herpes.*—In a case of herpes in a female, at present in the Westminster Hospital, Mr. Guthrie has employed the acetate of copper, as an external application, with very decided success. This ointment was originally employed by an old woman, who, about thirty years ago, undertook to cure some very severe cases of herpes at that time in the hospital. Her treatment was completely successful, but she refused to divulge the nature of the ointment. It was, however, analyzed, and found to be composed of acetate of copper. Ever since that period the acetate of copper has been applied in like cases with uniform success.

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ib.

16. *Efficacy of Iodine in Cutaneous disease.*—Case I, was an instance of well-marked sycosis menti, in a man 38 years of age, and who had been afflicted with it three years and a half.

This disease is allowed by all who have directed their attention to cutaneous affections to be most obstinate in cure, and often defying the most approved remedies.

The patient was admitted into the Middlesex Hospital, under Dr. Wilson, in December, 1832.

Over the whole chin, above and below, were numerous vesicles containing a clear fluid; some had burst, and discharged a thin yellow ichorous matter, which had incrusted on several parts, forming very annoying scabs; there was great heat and pain about the part, with some headache; otherwise, he felt in good health. He was ordered to be cupped to the neck for his headache, and then purged with compound jalap powder. In two days he complained of discharge from the urethra, and some scalding in passing his urine. He was similarly affected when the eruption first commenced, but it went off without any remedy. He now commenced applying to the chin night and morning, the following ointment:—

Iodini ℈ss.; Potassæ Hydriod. ʒss. tere simul; adde Adipis ʒj. ft. Ungt.

This treatment was resolutely persevered in, and he left the hospital in February, quite well both in regard to his eruption and urethral discharge.

Case II.—Henry Gibbs, æt. 14, admitted under Dr. Wilson, March 12, 1833, with an eruption covering the whole scalp, face, and neck: it commences with small pustules, which, on giving way, leave a large, firm incrustation. This had existed one week. After taking cold, he felt very poorly, and went to bed: on rising in the morning, he observed the eruption.

Ordered to be bled to ʒ vj. when he fainted.—To take the Dec. Dulcam. c. Liq. Potass. m. xv. ter.—A Linseed Poultice to the head and neck.

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This treatment was pursued till the 20th, when the eruption, not at all diminishing, he was again ordered

V. S. ad ℥ x.; and to use the same form of iodine ointment to the eruption. He now rapidly got rid of the old incrustations, no fresh one sprang up, and he was discharged cured in the early part of the following month.

This patient was seen a very short time since, and continues perfectly well. Whilst using the iodine ointment he complained (as many others have done) of soreness of throat, and tenderness on pressure of the submaxillary glands.

Case III. was unusually severe and obstinate. The patient, a female, had been under medical treatment ever since the disease first afflicted her, and nothing had completely eradicated the affection: she had got partially well, and returned to her occupation as servant, but was soon obliged to give up work from the annoyance she experienced, and a dread those about had of becoming contaminated. She was 17 years of age, and had suffered since her infancy from a pustular eruption over both hands, and wrists, and ears. Her general health was good when admitted, under Dr. Wilson, in March 1833. The treatment was simple, and the success complete: she immediately applied, night and morning, the usual iodine ointment, and took occasionally an aperient. This latter remedy did not form a systematic part of the treatment, as it was seldom required.

She became perfectly free from any eruption in two weeks from the application of the ointment, and was able to leave the hospital quite cured the first week in April. She has since obtained a situation as nurse-maid; and although the hands are constantly exposed, she remains in good health, without any appearance of fresh pustules breaking out.

Case IV.—J. Peters, a man of color, was admitted under Dr. Wilson, July 16, suffering from an extensive tubercular eruption of pustules around and under the chin and neck; it was so extremely painful and annoying, that he had long since left his employment, and had had various remedies applied to it without effect. The disease commenced a month previously, with pain at the epigastrium, and loss of appetite. His general health is good. Was ordered to apply a poultice to the part, and to be bled to ℥ xvj.; to take an aperient every other morning.

On the 29th he was directed to use the same form of iodine ointment, the eruption now beginning to spread, and becoming more annoying, though less painful. He steadily improved, and was perfectly free from any complaint about the parts on the 12th August. He was discharged the following week well.—*Lond. Med. Gaz.*

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17. *Tartar Emetic affecting the child through the mother.*—M. Minaret, of Chatillon-de-Michaelle, while treating a young woman for an attack of pleuritis, had an opportunity of observing the following curious fact. The patient had at her breast a child of four months, and being put on tartar emetic, it soon appeared that the medicine operated on the child as well as the mother. M. Minaret, anxious to ascertain the fact, had the infant put to the breast in his presence; but the milk was no sooner tasted than it proved nauseating; the child shewed every symptom of sickness and disgust, and threw up a quantity of coagulum. Another nurse was immediately procured, and the child was soon recovered. The mother also got well not long after, and resumed the suckling of her infant without any similar bad effects.—*Gazette Médicale.*

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18. *Lycopodium Clavatum in Urinary Complaints.*—Doctor Rodewald of Berlin, relates several cases illustrative of the efficacy of the leaves, or rather the creeping stems of this plant, in various urinary complaints, viz.—1st, in retention of urine, attended with gravel or a secretion of pus from the mucous membrane of the bladder; 2ndly, in atony of the muscles of the bladder; 3rdly, in weakness and relaxation of the mucous membrane of the bladder; 4thly, as a diuretic.

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In short, Dr. R. applies the lycopodium to many of those cases in which we at present order buchu or uva ursi. As it is an indigenous plant, abounding in various parts of Ireland and England, a trial of its virtues ought to be made. He recommends it in the form of a strong infusion or decoction; and relates one curious case, in which the use of this remedy cured a morbid irritability of the bladder in a boy seven years of age, who was obliged to pass water every quarter of an hour during the day, and wet the bed frequently during the night.

[*Dublin Journal, Jan.* 1834.

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19. *Colour of the Gums in Ague.*—Doctor Bonorden, who has had frequent opportunities of treating ague in the neighbourhood of Minden, has observed, that when the fits have been stopped by means of bark, sulphate of quinine, or other medicines, there is always danger of relapse, as long as the edge of the gums, where they are in contact with the teeth, continues to present a dark red, venous appearance. This state of the gums, depending on venous congestion, indicates the existence of a congested state of the internal organs, and where it is not observed, the practitioner is aware that he has to treat a case that will readily yield to medicine. After the paroxysms have been stopped by sulphate of quinine, *if this state of the gums continues, it will be necessary to guard against a relapse,* by giving occasional doses of the febrifuge for at least three weeks. When, notwithstanding these precautions, the face retains the aguish paleness, and the edges of the gums continue livid, then it will be necessary to have recourse to the muriated tincture of iron. Dr. B. observes, that this symptom is simulated by the gums, when their edges are unhealthy in consequence of the accumulation of tartar.—*Ibid.*

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20. *Fresh Prepared Carbonate of Iron.*—Doctor Büchner and Dr. Richter both attest the efficacy of this mineral salt, even in cases of neuralgia, where common, not recently prepared, carbonate of iron had failed. The mode of administering the remedy is as follows: twelve grains of crystalized sulphate of iron are to be mixed with six grains of dried carbonate of soda, and dissolved in half a cupful of water, slightly sweetened with sugar: this dose to be taken three times a day. It is equivalent to five grains of carbonate of iron, and operates as an anti-neuralgic medicine, much more powerfully than larger quantities of the carbonate of iron as sold in the shops.—*Ibid.*

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21. *Subcarbonate of Soda in Bronchocele.*—Doctor Klose of Breslaw relates three cases illustrative of the good effects of subcarbonate of soda in the goitres. Two recent cases were cured, and one very old inveterate tumour was sensibly diminished, by the use of a mixture consisting of six ounces distilled water, three drachms of syrup of orange peel, and two drachms subcarbonate of soda. Of this the patient takes a table spoonful three times a day; should it produce a feeling of nausea, this may be averted by chewing and swallowing a small bit of dried orange-peel after each dose. This remedy was originally recommended by Dr. Günther of Cologne, in Hufeland's Journal.—*Ibid.*

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22. *Nitrate of Soda in Common Dysentery.*—This salt was first recommended in common dysentery by Velsen, (Horn's Archiv. 1819,) and more lately by Bonorden, who says, that its effects are quite different from those of nitrate of potash, and that it acts specifically on the colon and rectum, diminishing inflammation, and abating spasms of these parts so powerfully, that it invariably cures simple dysentery, when given at its commencement. It is exhibited in barley water or some mucilaginous decoction, from two to six drachms of the salt being dissolved in six or eight ounces of the latter. Of this one table spoonful is to be taken every second hour. The nitrate of soda acts very mildly as an antiphlogistic, opening the bowels gently, and afterwards producing a determination to the skin. Nitrate of potash, on the contrary, acts as a stimulant on both bowels and kidnies, and consequently makes the dysenteric symptoms worse instead of better.—*Ibid.*

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23. *Arnica Montana in Chronic Rheumatism.*—My excellent and learned friend Dr. Thümmel, of Berlin, relates several cases which seem to prove that the anti-rheumatic powers of this plant are too much neglected. The virtues of arnica were formerly extravagantly extolled, and it was prescribed in almost every chronic disease; this caused it to be latterly disused. Doctor T. makes an infusion with a drachm or a drachm and a half of the flowers and six ounces of water. It is allowed to cool in a close vessel, and the liquor is then carefully decanted off, without pressing the flowers. Half of this infusion is taken at bed time, and half in the morning; some warm weak tea may be taken after it, and the patient should at the same time eat a small bit of biscuit to prevent the nausea which the medicine might otherwise occasion. It operates on the skin and kidnies, and appears to be applicable to such cases of chronic rheumatism as we have been hitherto in the habit of treating with the stimulating compound electuary, termed the Chelsea pensioner, or with tincture of guaiacum, spirit of turpentine, &c.

Among other cases related by Dr. Thümmel, one of rheumatic ophthalmia from cold, and one of deafness connected with rheumatism, are especially worthy of observation on account of the efficacy of the arnica.—*Ibid.*

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24. *Ranque's Remedy for Swollen Breasts.*—Every thing which can add to our knowledge concerning the best means to be adopted in cases where the mammary glands become swollen, painful, and indurated, in consequence of the child being taken from the breast, and the discharge of the milk by the natural outlet ceasing, must be thankfully received. Doctor Schnur has made an interesting communication on this subject. He was struck by some observations made by Ranque, (Froriep's Notizen,) and determined to try the remedy he recommended.

The swelling of the breast which precedes the formation of mammary abscess, is caused in the first instance by the retention of the milk and the consequent distention of the lactiferous ducts. But this is not the only cause of the local derangement that so speedily follows, for the vascular system of the mammæ is wonderfully increased preparatory to and during lactation, and, therefore, when this augmented circulation of the breasts is baffled in the performance of its proper function, the secretion of milk, it often tends to form with great rapidity vicarious and unhealthy products. Hence arises the obstinacy of many such cases, and hence they are frequently not found to be amenable to the common methods of treating local congestions or inflammations. All practical men are consequently obliged to adopt various methods of treatment, and the skilful accoucheur is often enabled by attention and pains to save his patient from the suffering accompanying such affections. Ranque, impressed with certain theorectical ideas which is unnecessary here to discuss, was led to the use of the following liniment:—

℞. Extracti Belladonnæ ℥ ii.
Aquæ Laurocerasi ʒ ii.
Ætheris Sulphurici ʒ i.
Ft. Linimentum.

This must be well shaken before it is used. It is to be rubbed into the breasts as high as the axillæ, morning and evening, and the breast must be then covered with fine flannel soaked in the liniment. This proceeding must be repeated every day, until the swelling disappears, which is usually on the second or third day. The æther has a smell which to some is very disagreeable, but they ought to bear this inconvenience if possible, for it adds essentially to the efficacy of the remedy. The subject is of such great importance, that, at the risk of being tedious, I shall give the whole of what Dr. Schnur says on the following cases:—

"E. M. a Jewess, short and slender, was married when thirteen years old to a husband aged fourteen. Immediately after marriage she became subject to hysteria, and the catamenia grew irregular. On the third year after her marriage she became pregnant, and, arriving at her full time, was delivered of a

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small but healthy child. She persisted in attempting to nurse the infant, although her breasts were ill developed, and her general health far too weakly to authorize the attempt. Six hours after its birth the infant was applied to the breast, when she experienced flying stitches darting through them, which soon amounted to positive and considerable pain. The circumference of the mammæ now increased in size, and in twenty-four hours it was found impossible to extract a drop of milk from them, either by rubbing, pressing, or drawing them. The breasts had lost their proper elastic feel, their surface did not yield to the pressure of the finger, neither was it hot or red, but like the rest of the skin, it was quite white and blanched; her feet were cold, tongue clean, and bowels gently opened by a saline aperient. The patient tossed about in her bed, and the pain in the breasts were so excessive as to cause her to rave and faint. Her pulse was small, frequent, and contracted, and she was affected with constriction of the chest, and spasms of the muscles of the neck. Before my arrival the attendants had tried inunction with almond oil, the application of bags containing dried herbs warmed, fomentations of chamomile, &c., and were just going to apply a poultice of linseed meal. Under the circumstances there appeared to be an urgent necessity for calming the general nervous irritation, and diminishing the pain felt in the breasts. To effect these purposes nothing appeared better calculated than Ranque's liniment, and I, therefore, caused it to be applied in my presence. After the flannel had been on one hour, the skin of the breasts became slightly red, and the patient expressed considerable relief. The tendency to fainting now vanished, and the pulse lost its irritable contracted stroke; nevertheless she complained of the smell of the æther, which, she said, gave her head-ache, and I consequently substituted alcohol in its place. With the diminution of pain the hardness of the breasts likewise subsided, and in forty-eight hours all traces of this local affection had vanished.

"In two other somewhat similar cases, Ranque's liniment produced the most beneficial effects, although not so rapidly as in that just related. In both the smell of æther was complained of, but I persevered in its use, being convinced that it contributes much to the efficacy of the remedy in causing that redness of the skin, which seems essential to its action. Although those cases prove that this remedy possesses considerable power, I by no means wish to assert, that it is applicable to all cases, or that its success is invariable; on the contrary, I am sure that the number of cases to which it is applicable are not very numerous, for it must be recollected, that in plethoric robust women, who have enjoyed a good state of health previously to delivery, antiphlogistic and derivative remedies, such as purgatives, are indispensably necessary, and when administered in proper time they have the best effect, often, although not invariably, enabling us to prevent the formation of abscesses or of induration of the mammæ. It is in delicate women, of a lean habit and slender form, subject to hysteria or fainting; persons whose constitutions have been injured by previous illness, hemorrhage after delivery, or by too frequent child-bearing; it is in such persons that Ranque's liniment will be found useful. Its composition indeed, consisting of narcotics, combined with stimulants, seems to point out the nature of the cases in which it may prove serviceable."—*Ibid.*

Dr. Kluge, has published the following extremely interesting remarks on the effects of iodine in checking salivation, which I give the more willingly as garbled and imperfect accounts of the matter have appeared already in in some of our British periodicals.

"Professor Knod Von Helmenstreitt, in Aschaffenburg, was the first who recommended *iodine* in mercurial salivation.* As the syphilitic wards of the great hospital (Charitè) in Berlin, afford numerous examples of this affection, I determined to give iodine a fair trial, and for this purpose I selected seventeen cases, viz. twelve women and five men, all of whom labored under severe mercurial salivation. Helmenstreitt's first directions were to dissolve five

* Vide Hufeland's Journals, May, 1832.

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grains of iodine in two drachms of spirits of wine, to which two ounces and a half of cinnamon water, and half an ounce of syrup are to be added. Of this the patient was to take at first half a table-spoonful four times a day, which dose was to be gradually augmented to two, four, six, or even eight grains daily. His latter directions prescribed two grains, or even more, the first day, which dose was to be rapidly increased.

"Two young women who lost four or five pints of saliva daily, were cured in three days by eight grains. One man and one woman got well in four days, having taken ten grains. In two men and four women, the ptyalism ceased entirely in six days, during which, each had taken from twelve to sixteen grains. In two men and two women, the spitting was cured on the seventh day after iodine had been taken to the amount of from twenty to twenty-eight grains. In the latter case it was, however, remarked, that the great pain of mouth and fetor of the breath were notably diminished after one day's use of the iodine. In two young women the remedy appeared at first to be of little or no use; in both the salivation amounted to three or four pints daily at the termination of the seventh day, and the only advantage gained appeared to be a certain diminution of soreness of mouth.

"One of these patients was then obliged to desist from the use of the remedy on account of some constitutional symptoms, and I looked upon this case as a failure. This conclusion was, however, too hastily made, for the good effects of the iodine began to appear on the following day, and on the third day after she had left it off, that is on the eleventh from the date of its first exhibition, all morbid secretion of saliva had disappeared, and the gums had very nearly recovered their healthy appearance; in short, the patient had recovered, having consumed thirty-four grains of iodine. In the other young woman we stopped the exhibition of iodine on the tenth day, at which time she had taken thirty-six grains, with the effect of diminishing the daily secretion of saliva from five to three pints. On the twelfth day she was well.

"In one girl, the accidental occurrence of erysipelas of the face prevented the continuance of the remedy. The use of the iodine did not produce in any one of these patients any disagreeable or untoward symptoms, and as I kept them all for some time in hospital after the salivation had ceased, I have the pleasure of likewise testifying that the cure was not only safe but permanent."—*Ibid.*

Since the preceding was written, I had an excellent opportunity of trying the effects of iodine in arresting the progress of mercurial salivation, and I am happy to say that the result was favourable.—A man named Michael Kelly was admitted into the Meath Hospital, on the 14th of November last, labouring under pneumonia, affecting a large portion of the right lung, and combined with dry pleurisy. The disease had commenced ten days before, and notwithstanding two venesections, and the exhibition of tartar-emetic, hepatization of the lower portion of the inflamed lung had taken place. The man's situation was critical in the extreme, but his life was saved by cupping, blistering, and above all by the rapid ingestion of calomel, at first given in scruple doses, and afterwards in smaller quantities. In the course of two days he took seventy-four grains of calomel, latterly combined with large doses of opium. On the third day his mouth became affected, and salivation set in, accompanied by a rapid subsidence of all the dangerous symptoms. Mercurial salivation thus suddenly brought on by large doses of calomel, is invariably profuse and violent, and seldom begins to subside until several weeks have expired. In the case before us it was increasing daily, when, on the 20th of November, I commenced the exhibition of iodine. On the 20th he took three grains, on the 21st and 22d together, eight, and on the 23d, and 24th sixteen grains, making, in the whole, twenty-seven grains taken in five days, when it was omitted on account of nausea being caused by the last dose. On the 26th its use was resumed, and on that and the following day he got eight grains more, making a sum total of thirty-five grains. On the 1st of December the salivation had ceased altogether; the

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mercurial fetor, with the soreness of mouth, were nearly gone, and neither the gums or teeth had suffered in the way they usually do from a violent mercurial salivation. *The most important result obtained, however, was, that the iodine did not produce any detrimental effects to the pleuritic or pulmonary diseases; on the contrary, its exhibition after the mercury had affected the constitution, seemed to resolve the still remaining inflammation most rapidly.* The same observation applies to a case of violent pericarditis occurring in a gentleman whose life was saved by mercury exhibited by Dr. Brereton and myself. Forty grains of iodine produced no reappearance of inflammation, or any bad effects whatsoever!

ROBERT J. GRAVES.—*Ibid.*

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25. *Facial Hemiplegia—External use of Phosphorus.*—The symptoms of this local palsy are well known; the mouth is drawn to the sound side, the eye is half-closed and weeping; the point of the nose is sometimes distorted, and the patient is often utterly incapable of moving the forehead, eyelids, and nostrils of the affected side; the motion of the eyeball, however, remains perfect; and the saliva usually flows more profusely than in health; but part of the food, especially if it be liquid, is apt to escape from one corner of the mouth. The temperature of the palsied parts is often lower than that of the other half of the face. The general health may be quite unimpaired. This hemiprosopoplegia may happen at any period of life; but in childhood it is very rare. The following treatment was successful in three cases.

℞. Phosphori, gr. vj.
Olei animalis æther, 3 iij. M.

The palsied parts are to be rubbed with this embrocation three or four times daily. After it has been used for a day or two, several places become sore, and then form scabs or crusts, which gradually dry and fall off. The rubbing must be renewed a second time, when the skin recovers its soundness; and in severe cases the operation requires a third repetion. Generally after the first desication, the parts are found to have regained a slight power of motion, which increases more and more after the second and third rubbings. The use of the liniment causes very considerable pain, and a feeling of burning; but no evil effect has ever resulted from it.—*Hufeland's Journ.*

[*Medico-Chirurgical Review, Jan.* 1834.

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26. *Use of Iodine against Salivation.*—Every medical man knows well how difficult, and yet how desirable a thing it is, to check a profuse salivation, whether it has been induced by mercury or not. Hufeland informs us that in iodine we possess the wished for means. In seventeen cases it was employed with striking benefit; the severe smarting, the tumefaction of the glands about the mouth, and the profuse flow of spittle ceased after three or four days use of it; and the mercurial sores often healed up at the same time.

The doses usually given at first, was two grains in the course of the day; and it was increased to four grains, in the following formula:

℞. Iodini, gr. v., solve in
Spir. Vini, 3 ij.
Aquæ Cinamomi, ℥ ijss.
Syrupi. ℥ ss., M.

Half a table spoonful to be taken every six hours—the dose to be gradually increased.—*Ib.*

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27. *Use of Acetas Plumbi in several Pulmonary Affections—Case* 1. A woman, aged 32, of a phthisical constitution, was laboring under the symptoms of general pyrexia, accompanied with frequent cough and purulent bloody expectoration. She had suffered a smart attack of pleuritis twelve months before, and from that time had become considerably emaciated. A small bleeding and the employment of sal ammoniac, with small doses of the tart. antimon. and an occasional powder of calomel, relieved the fever and dyspnœa; the sputa were now free of any blood, but became more and more purulent. I

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ordered her the acetas plumbi and opium (of each ¼ gr.) every eight hours, and in the course of eight days she was astonishingly improved. Under the use of a decoction of lichen and polygala amara (boiled together till a complete jelly is formed,) she quite recovered her health.

Case 2. A man, aged 33, who had suffered repeatedly from attacks of pneumonia, was again laboring under its symptoms; they had lasted for seven days, when Dr. R. was called. By large bleedings and the use of nitre, combined with tart. antimon. in aqua laurocerasi, the inflammation was speedily arrested; but there remained a most copious expectoration, and the sputa were assuming a more purulent appearance. Pills, composed of the acetas plumbi and opium, were given with very marked benefit; the use of them was continued for six weeks, after which time the patient was entirely well.

Case 3. A child, five years old, had been treated by many different physicians for a phthisical irritation of the lungs, with repeated blisters, leeches, and the use of digitalis. The little patient expectorated a vast quantity of sputa, when I ordered him the following—

℞. Sacchari saturni. . gr. ij.
Infus. digitalis. . . unc. vj.
Laudani liquidi. . . ℥j. Misce.

Capt. ℥ij ad ℥iv. 6tâ vel 4tâ quâque horâ.

In three days the expectoration was greatly diminished, and the boy improved in other respects. He speedily was quite well.

Case 4. May 15th. B. W. aged 44, a professional musician, after exposure to cold, was seized with shivering, followed by heat, with severe pain in the chest, laborious respiration, cough, and frothy discolored expectoration. Venesection to a pint, and repeated doses of nitre and antimony ordered.

16th. All the symptoms aggravated; blood exhibiting a thick buffy coat—venesection to be repeated. While the blood was flowing, he felt himself much relieved; but immediately afterwards all his distress returned; the frothy sputa were in enormous quantities, so that the patient could with difficulty expectorate—the mucous rattle was exceedingly loud, and the breathing was much oppressed. A grain of calomel, and three of the red sulphuret of antimony, were ordered to be given every two hours, and the refrigerant mixture to be continued.

Little or no relief, however, was procured; the gurgling and rattling in the chest were truly frightful—the sputa were still frothy and tinged with pure blood, and their expectoration was painful and distressing. The bleeding from the arm was repeated once more, in consequence of the blood having presented, on both occasions, a very thick and tough crust; but no advantage followed, and being now alarmed that the accumulation of the sputa in the air-cells, and that the co-existing infiltration of the substance of the lungs, might speedily suffocate the patient, I resolved to commence the use of the acetas plumbi and opium. Three grains of the salt were dissolved in six ozs. of cherry-laurel water, and half a drachm of laudanum added; a table-spoonful every three hours. In the evening the symptoms were already much relieved, the expectoration less, and more easy, and the pulse reduced to ninety beats. Occasional delirium occured; but having observed frequently, in many formidable cases, that this symptom appeared on the supervention of a critical change, I was rather pleased than distressed at its occurrence.

17th. Amendment has gone on progressively; delirium less frequent and continued—pectoral symptoms much more easy—breathing almost natural—pulse 75—skin perspiring comfortably.

The medicine being discontinued for two days, a relapse of all the distress returned, cough, dyspnœa, difficult expectoration, and great anxiety; fortunately, by immediately resuming the medicine as before, the symptoms were once more subdued, and the cure was completed under the use of a jelly, prepared of lichen and the polygala amara.

Case 5. A woman, aged 58, had labored under an inflammatory affection of the chest for eight days, when Dr. R. was summoned to her assistance.

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She had alternate chills and heats, pain in the side, short distressing cough, very scanty expectoration, and great anxiety. The pulse was 80, soft and weak. The pain and feverish symptoms were relieved by bleeding and the use of digitalis, with nitre. On the following day there was a return of her distress, and recourse was, therefore, had again to blood-letting; the blood at both times was strongly buffed. But although the stitch in the side was assuaged, the general condition of the patient was decidedly worse. She could not lie down, but was obliged to sit up constantly; the cough was exceedingly distressing, and the anxiety much aggravated; she occasionally rambled in her talk; the pulse was 100, soft, pappy and intermitting, and the general strength very low. She was now ordered a table-spoonful of the following mixture every four hours:

℞. Extract. digitalis purpur. gr. iv.
Aquæ cerasi nigri. . . . unc. ij.
Plumbi acetatis. . . . . gr. j.
Laudani liq. sed. . . . . gtt. xv.
M.

Next (18th) morning, a decided amendment; the dyspnœa and cough less frequent; expectoration had commenced; some sleep during the night. The medicine to be continued, and veal broth to be allowed. From this time she gradually recovered her health.

Case 6. A thin debilitated man, who had suffered repeatedly from attacks of pulmonary catarrh; was laboring under severe harrassing cough, attended with a copious muco-purulent expectoration, when he applied to Dr. R. The mixture, with digitalis, sugar of lead and opium, was immediately ordered for him; and in the course of five or six days, he had nearly quite recovered.

Case 7. A woman, aged 32, after exposure to cold, was seized with violent pneumonic symptoms, to which were added repeated attacks of severe cardialgia. She was five months gone with child. She was bled largely, and treated with small doses of tartar emetic and nitre. The pectoral distress was somewhat alleviated, but that of the stomach much increased by the remedies; and, as the pregnancy was deemed a proper objection to very copious bleedings, the mixture, consisting of three grains of acetate of lead in six ozs. of infusion of digitalis, was ordered for her, in doses of a table-spoonful every four hours.

After the third dose, the dyspnœa was decidedly relieved—the pulse less frequent, but the cough still very troublesome. The cardialgia had not returned; the expectoration, which hitherto had been "cruentus croceus," was more of the character to which the epithet "coctus" is applied.

Although there was a relapse of the severe symptoms, which required a small venesection, and an increase of the doses of the mixture; and although abortion came on in a few days afterwards, the patient progressively improved; the expectoration had become easy and moderately copious, the pulse soft, and the general pyrexia much abated. A miliary, or apthous eruption had appeared on the lips, and in the mouth and fauces; but this also gradually vanished.

A febrile reaction threatened to set in on the following week; but its advance was checked by repeated doses of the liquor kali acet. in bitter almond emulsion, and by six grains of Dover's powder at bed time. In the course of a short time she became, (to use the German expression) kernel-sound, sound to the very bone and marrow.

Case 8. T. P. aged 40, was seized on the 22d Nov. with alternate heats and chills, with severe pain in the side, increased by full inspiration, and with a strangling cough, which returned frequently in paroxysms of great violence; these paroxysms often lasting for a quarter of an hour at a time. The patient could lie only upon his back, and even in that posture was continually panting for breath. He was immediately bled from the arm, and a refrigerant nauseating mixture, with small doses of calomel, given frequently.

Under this treatment he went on improving, till the morning of the 24th,

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when he was found considerably worse; intolerable wandering pain, like the stabs of a knife through the chest,—cough harsh and very severe—skin parched, and occasional delirium. A blister was applied to the chest, and a mixture with camphor, opium, and nitre ordered to be given every second hour. Although some relief was obtained from these means, the pneumonic symptoms were not satisfactorily subdued, till recourse was had to the acetas plumbi, with opium.

About a dozen other cases, similar in most respects to those which we have detailed, are brought forward by our author to confirm the good opinion which he has formed of the effects of lead, opium, and digitalis combined, in inflammatory affections of the lungs.

Few English readers will be inclined to be of as great faith as their German brother; still we must fairly admit, that as the sugar of lead is undeniably known to possess very considerable sanative powers in hæmoptysis, it is but probable that in pneumonia, bronchitis, and hectic irritation, it may have a certain range of efficacy.

Our author informs us that he is disposed to believe that the remedy exerts its influence chiefly on the smaller and capillary vessels; and he therefore always premises bleeding and other depletory measures, in order that the morbidly increased action of the heart and larger arteries may be considerably reduced. He has derived very pleasing results from its administration in all cases where the quantity of sputa is very large; it seems to exert a direct astringent power on the mucous membrane of the bronchi.

In asthma, it has been also of great service, by relieving the distressing dyspnœa, and in facilitating the critical discharge from the lungs. A case of severe chronic cystitis is mentioned, where exceedingly good effects were obtained from its employment, after the ordinary treatment had utterly failed. Reasoning from analogy, he is led to anticipate the same advantages in sanguineous apoplexy, which is, in an especial manner, a disease of the arterial red blood capillaries. When there is a tendency to serous effusion, either in the brain, or into the substance of the lungs, the remedy is not to be employed; it is the "plastic," and not the "exhaling," action of the vessels, or to borrow the German phrase, it is the "hypercrystallizatio animalis" which is under the control of lead.

[The late Dr. Rush, of Philadelphia, highly praised the use of acetas plumbi in menorrhagia, threatened abortion, &c. &c.]—*Rust's Magazin für die gesammte Heilkunde.—Medico-Chirurgical Review, Jan.* 1834.

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28. *On the Plica Polonica*—M. Brierre de Boismont, when he visited Warsaw, on the first invasion of the cholera, was anxious to collect some authentic intelligence respecting this singular endemic disease. But in the city itself it is by no means common; he therefore requested his friend, Dr. Macinkowski, to communicate the results of his experience for several years past, and of these results we shall now give a short abstract. The gist of the whole may be thus shortly stated; that the plica is to be considered, rather as a symptom of, or attendant upon a vitiated state of the general system than as a local or idiopathic disease, sui generis.

We are informed that it is comparatively rare among the better classes of society, and that unfortunately a very general notion exists among the lower orders, who are notorious for their filthiness, that it is of no use to apply for medical relief to counteract this peculiar disease of their country.

Such is the true cause of the stubborn obstinacy of the greater number of cases; the constitution has been in fact long polluted, and the offspring of this taint, viz. the curious disease of the hair is rooted, like a poison herb upon a poisoned soil. Nosologists have greatly erred in classifying the plica among diseases of particular tissues; instead of investigating its relations with different morbid states of the system, they have began by noting down its prominent existing symptoms and appearances, and have tried to deduce from these a theory to explain the various complications of the disease. The error

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has arisen partly from an old historical tradition, that the plica was imported into Poland in the thirteenth century by the Tartars: but here as is too often the case with historical narrative, each succeeding author has copied his predecessor, without troubling himself to consult the earliest chroniclers of the event. During the dreadful incursions of these barbarians, they ravaged and desolated all around them; and upon leaving the countries of Poland and Russia, they dammed up many of the streams with the corpses of their victims, thus inundating the soil, and poisoning the atmosphere with pestilence. The effect of this was to occasion a formidable epidemic, but no mention is made of the plica at this time. M. Frank, following Sprengel, is therefore quite in error as to the origin of the disease; and we are therefore warranted by history in not believing that it was communicated contagiously to the Poles by their cruel invaders.

Indeed, the very doctrine of its contagion is quite contradicted by the observations of Dr. Macinkowski; not a single fact, he says, has ever occurred to his notice, to lead him to suppose that it is propagated by direct contact. Besides, it is much more consistent with its singularly circumscribed locality or habitation, to seek the true efficient cause in the influence of manners and social customs, of food, or of certain terrestial and atmospheric phenomena, which may be peculiar to the country, just in the same way as we account for cretinism among the Alps, and pellagra in the plains of Italy.

In reference to the first mentioned causes, it is interesting to find that a usage prevailed long before the thirteenth century, or even the introduction of Christianity into the country, which very evidently must have had some reference to this subject.

This usage, which was connected with religion, and known by the name of "postrzyzyny," imposed an obligation upon all parents not to cut the hair of their children before they were seven years of age, at which time the ceremony was performed and that of baptism together.

It is not very easy to give any rational explanation of this national custom: be this as it may, we not unfrequently observe in young children, at home, affected with scrofulous disease, a matting together of the hair; and until the scrofulous tendency of the system becomes less and less, the hair does not obtain a healthy development.

This systematic change is not unfrequent about the period of life at which the ceremony of tonsure was performed by the ancient Poles. Some authors have stated that the plica was first known in Poland about the close of the sixteenth century, and have enumerated among its secondary symptoms a number of those which belong almost exclusively to syphilis; but as this last named scourge also was introduced into the country at the above date, it is very probable that the two diseases might exist simultaneously, and often were not accurately discriminated from each other.

Leaving however this topic, we shall proceed to give a short description of the genuine plica; and although we set out with contradicting the common opinion of it being a "morbus sui generis, et loci," we deem it more convenient to allude to its outward and more visible signs on the hair and nails, before treating of the systematic disease, with which we believe it to be in all cases connected. The opinion, which was long very prevalent among medical men, that uncleanliness was the common cause of plica, is now abandoned; the single fact that soldiers are sometimes affected with it, would disapprove it; for we all know the rigorous discipline maintained over them in respect to washing and so forth. True indeed it is, that neglect of personal cleanliness may cause a matting of the hair, but this is not true plica; it is the "fausse plique," and only requires proper attention to remedy it. In the former the hairs lose their natural and healthy qualities; they are no longer elastic, or shining; they acquire a marbled appearance, and although glued and netted together with a glutinous matter are not less dry than before, with the exceptions of the roots, which are soaked with the diseased secretion.

Such is a concise description of the true plica; the bizarre accounts of the

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hair becoming painfully sensitive, and bleeding when cut, are drawn from the author's fancies, not from the bed-sides of patients. The second stage of the disease commences when the diseased secretion ceases and healthy hairs spring forth, so as to carry forward and detach the matted web from the scalp;—when the young hairs are sufficiently long, we may readily cut away the mass of disease with perfect safety. A hardening of the nails is an occasional concomitant of the affection of the hair. In respect to the constitutional symptoms, we do not hesitate to assert that every patient is either actually at the time affected with some acute or chronic disease, such as exist in other parts of Europe, or exhibits signs of having recently suffered. Whenever the general health begins to mend, the local disease becomes less; the morbid secretion ceases, and the old diseased mesh is pushed forward by the sprouting of new healthy hairs beneath. We do not sincerely credit the assertions of authors, that they have seen cases of genuine plica, in individuals who were otherwise quite sound; and our opinion is confirmed by the very admissions of by far the best inquirers, that the disease, before assuming its pathognomic character, always appears under the mask of some other affection.

The local disorder of the hair stands in the same relation to plica as the profuse perspirations do to the sweating sickness, the diarrhœa to cholera, or the dry parchment skin to pellagra;—these are all mere symptoms; but they do not constitute by themselves the diseases in question.

Perhaps we should be more correct in reference to plica, were we to regard the local affection as a critical event, just in the same manner as we frequently do many hemorrhages, or profuse sweating, purging, depositions in the urine, salivation, &c. Certain it is, that we have seen towards the close of serous acute diseases, an entanglement of the hairs supervene within the short space of twelve hours, and from that moment an immediate amelioration of the case, which before seemed hopeless, take place. Such examples have generally been met with in young healthy men, who were laboring under violent inflammation of the head or chest, or under those gastro-enteritic affections which precede and accompany severe fevers.

But it is more commonly during and after the existence of chronic diseases that we observe the eruption of plica to act as a wholesome derivative or critical discharge. A pedlar Jew had for several years labored under derangement, and the nutritive functions had also suffered;—on a sudden the symptoms of plica appeared, and the reason and general health were forthwith restored. Dr. Malcz, one of the best physicians in Warsaw, mentioned the case of an officer's lady, which is instructive. She was considered to be phthisical by all who had visited her, and had become extremely emaciated.

No sooner did the hair begin to be diseased than Dr. M. recognized a decided amelioration of all the pectoral symptoms; when the plica was completely developed, her health rapidly improved. At the end of twelve months the capillary disease ceased, so that the entangled mass could be removed; and fortunately there was no return of the chest complaint. It has been stated by many authors that the plica is not now so frequent a disease in Poland as it used to be. No doubt this is correct, in regard to the large towns and among the military; and we attribute the decrease solely to the improved state of medicine, which has introduced a more vigorous treatment of diseases in general. Unfortunately, however, the hut of the peasant and the hovel of the artisan are still rife with this endemic. By far the greater number of cases arise as we have described above. In the most aggravated form, which is not often seen, the diseased secretion is astonishingly active, the hairs not only grow quickly, but they become enlarged in size, so as to resemble thick horse-hairs. The Museum of Anatomy in Warsaw contains some specimens truly remarkable from their length and thickness.

In such cases the secretion may be compared in its effects with the colliquative discharges of other maladies. With respect to the external exciting causes of plica, they may be endemic, or special and individual. It is a fact of history that the disease was at one time known not only in the adjoin-

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ing countries of Hungary and Germany, but also in Alsace, in the Rhenish provinces, and in Belgium.

The excessive filthiness of the poor population, especially among the Jews, no doubt, favors its development, although we do not consider this, per se, to be capable of inducing it. The evil is made worse by the ignorant prejudices which lead them rather to encourage than to stop it, when any symptom of its approach appears; they suppose that it is not possible to prevent its course, and that no medical assistance can be of any avail; they therefore wrap their heads up warm, employ fumigations to them, and moisten them with irritating washes.

We have not sufficiently accurate or extensive observations to enable us to explain the probable aerial and terrestial agencies. It is a subject well worthy of a diligent inquiry; for its satisfactory solution would contribute powerfully to facilitate the treatment of the disease, and perhaps ultimately to eradicate it completely. It is unnecessary to enlarge upon the different sorts of remedies which have been proposed; the grand indication in all cases is to find out the systematic derangement, and to endeavor to cure that; the local malady is only of secondary importance.—*Archives Generales.—Ibid.*

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29. *On the Treatment of Porrigo Decalvans with a solution of Tartar Emetic.* By Henry C. Beauchamp, M.D.—As the hair has always been considered the greatest natural ornament, so we find that much pains have been bestowed upon it among all nations, and that the various diseases which affect the hairy scalp, have from the remotest ages attracted the attention of medical men, who often experience no small embarrassment in their treatment, and perhaps I could scarcely mention a disease which has more frequently baffled the skill of the physician than that named *porrigo decalvans.* The propriety of placing this affection in the genus porrigo I much doubt, but shall not, however, stop here to consider its proper place in a nosological arrangement, as my object is merely to detail the result of two cases which were successfully treated by the use of a solution of tartar emetic.

I was led to try the effects of this remedy in the disease before us, in consequence of a conversation with my friend Dr. John Carter, an army surgeon of considerable experience, who informed me that he had often succeeded in restoring the growth of hair which had fallen off after acute diseases, the use of mercury, &c., by applying to the scalp a solution of tartarized antimony, of the strength of five grains to an ounce of distilled water; the idea immediately struck me that the same means might probably be useful in the baldness produced by this species of porrigo, and I resolved to give it a trial on the first opportunity.

Shortly after this, a young lady a governess in a respectable family, applied to me, saying, that in combing her hair she had a short time previously observed a part of her head, about the size of a half-crown piece, was completely bald. Upon examination, I found that this portion of the head, unlike what generally happens, was slightly red, and I thought it more advisable to apply a few leeches in the first instance, intending to follow up the treatment with the solution, but here there was no necessity, as the hair began to grow very quickly after the second application of leeches. The lady then went to the country, and after a lapse of several months she returned to Dublin and applied to me again with another portion of the head bald; the hair, however, on the part first affected, had grown to a considerable length during the interval, the portion now without hair presented the usual appearance, being white, smooth, and glossy. As leeching had produced so good an effect before, I was induced to try it again, but without the slightest benefit; I now resorted to the tartar emetic, having the bald surface washed twice or three times daily with the solution; she was obliged again to go to the country, but upon her return I had the pleasure of seeing that the hair had grown of the same color and consistence with the rest. I have added this fact, because I believe it sometimes happens that when a part of the head has become bald from disease, if the hair grows again, the new hair is somewhat different from the old.*

*I may here remark that circumstance takes place remarkably in the horse when any

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This is the only case of this disease in which I have observed any appearance of vascularity of the affected part, but perhaps this occurs from our rarely seeing it at a sufficiently early stage, when perhaps some slightly antiphlogistic treatment locally applied might at once remove this unsightly affection. I must also add, that in this case the solution did not produce any eruption.

The next case in which I had an opportunity of trying the tartar emetic, was that of a young lady, about sixteen years of age, whose parents applied to me to know if there was any means of reproducing the hair which had fallen off. Upon inquiry I found that the disease was of six years' standing: that it at first appeared only in one or two spots which were rubbed with tincture of cantharides and the hair grew, but in a few months again began to fall off, when the cantharides failed to reproduce it. A great variety of remedies had been applied; blisters and many other stimulating substances, but all in vain. When I saw this young lady in May last, more than half the head was bald, in spots varying from the size of a sixpence to that of a half-crown, presenting a smooth, glossy, white appearance, without the slightest trace of vascularity. I directed a solution of tartar emetic, about five or six grains to the ounce, to be applied as a lotion to the head, having the remaining hair shaven; but, owing to some mistake, the solution applied was of considerably greater strength, the exact strength I could not ascertain, and brought out a large quantity of pustules, similar to those occasioned by the ointment of tartar emetic. When these had healed I perceived a slight down had grown on the affected parts, but of a lighter color than the remaining hair. I then recommended the hair to be again shaved, and the solution of proper strength to be applied; but the mother of the young lady, anxious that the cure should be effectual, applied a very strong solution, which not only brought out an eruption on the head, but over nearly the whole body, accompanied by swollen face and considerable fever, to obviate which, I was obliged to resort to antiphlogistic measures, the application of leeches to the head, saline purgatives, and low diet. Under this treatment the fever subsided, and the pustules disappeared in all parts of the body, except the head, where they were so close as to run into each other, forming an immense scab not unlike some of the severer forms of tinea capitis; this, however, yielded after some time to poultices; the lady bathed during the summer months in the sea, and had the head repeatedly shaved, and I have now, the 6th of November, the pleasure of stating that the disease has completely disappeared, and that the head is covered with an uniform growth of hair nearly an inch long.

Although it has sometimes happened that the application of tartar emetic ointment has produced considerable eruption, I never saw nor do I recollect to have read any account of its producing so extensive a one as happened in this case, or that any eruption so produced was accompanied by so much fever, which I am inclined to think was owing to the great strength of the solution and the peculiar idiosyncrasy of the patient, as no eruption appeared in the first case; and my friend Dr. Carter assured me that he never saw the solution produce eruption, in any case where he applied it to induce the growth of hair which had fallen off after fever or use of mercury.

It is very difficult to account for the action of the solution of tartar emetic in these cases, as we know it so frequently fails in the cure of porrigo decalvans when applied in the form of ointment. I do not pretend to say that it will succeed in all cases, or that it has had a sufficient trial to recommend it to the notice of the profession; but I have been induced by some medical friends to lay the results of those two cases before the public, in the hope that others who have better opportunities may give the remedy a fair trial.

[*Dublin Journal, Jan.* 1834.

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30. *Glanders in the Human Subject.*—It is nearly three years since Dr. Elliotson drew the attention of the British practitioners to the fact, that the glan-

portion of the hair has been rubbed off by the pressure of the harness; the new hair is almost always white, whatever may have been the original color.

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ders of the horse was communicable to man. (*See Med. Chir. Trans.* vol. xvi.) The doubts which were entertained on this subject have been since gradually giving way, and the question seems now to be set at rest, by the publication of a case by the same eminent and successful physician, in the new volume of the Med. Chir. Trans. the particulars of which we here subjoin.

William Johnson, aged twenty-three, was admitted on the 31st of January, into St. Thomas' Hospital, under Dr. Williams. He complained of tightness across the chest, pain in the right side and loins, and great lassitude. The tongue was somewhat coated with yellowish mucous. There were sweating and thirst, and the pulse was 90.

On the 2d of February there were pains of the head and loins, and frequent watery and offensive stools. He became a little incoherent in his answers; rigors began, and the tongue was tremulous. He continued to be occasionally delirious, and on the 4th, in addition to the other symptoms, there was pain in the forehead and vertex, in the right hypocondrium, and in the extremities. On the 10th he had been furiously delirious, and required strapping down; he complained of gnawing pains in all his limbs, of great difficulty in moving the left arm, for the joints were very painful, and the knuckle of the fore finger was tumefied and red; the discharge from the skin was profuse, sour, and offensive; leeches were applied to the temple. On the 11th the swelling in the hand had increased, there were also a red swelling on the right outer ankle; the tongue was covered with a brown dry fur, and there were much thirst and heat of the throat. On the 13th, a portion of his chest which had been blistered before his admission, and had now been sloughing several days, was affected with burning pain; the right temple on which the leeches were applied, was much swollen and dark colored, the right eye closed, and the leech bites discharged an unhealthy pus. On the 14th, in the evening, an offensive and yellowish discharge began from the right nostril, and a large swelling arose in the middle of the forehead of a purplish appearance, the left eye was nearly closed, and numerous tumefactions took place on the arms and legs; several phlyzacious pustules were seen on the left side of the neck; the pulse was 112.

Mr. Stone, the assistant apothecary, who had seen the former cases of glanders in the hospital, imagined, from the present appearances, that this must be one of the same kind, and on questioning the man, *actually learned that his occupation was among horses, that he had been grooming a glandered horse, kept in a stable by itself, and that he remembered that the discharge from the nostril had frequently fallen on his hand, upon which the scar of a wound was still visible.*

On the 15th, being in the hospital, I was requested, says Dr. Elliotson, by Mr. Stone, to see the patient, and I did not hesitate for a moment to coincide with him in opinion; I did not know the man's occupation, but asked him the same questions that Mr. Stone had put to him, and of course received the same answers. The whole scalp was now become tumefied, the forehead purplish, the eyelids red and shining, the burning sensation in the throat and nostrils, and the thirst, were intense, more tumefactions appeared on the extremities and abdomen, and several phlyzacious pustules appeared on the left side of the body. The discharges from the skin and bowels continued copious. The pulse was 124.

On the 16th, the discharge from the nostrils, particularly the right, was very considerable, and of a glutinous and brownish character, and ran in a continued stream down the face and neck—the thirst was unquenchable. Another purple tumefaction appeared on the right side of the nose, near the inner canthus, and soon increased so as to occupy nearly the whole of that side of the nose. On the 17th he sunk, and died early in the morning.

Autopsy.—On cutting into the various tumefactions on the head, neck, and extremities, they were found to be full of pus, underneath which, in many, a number of small white granules were seen, and these, in several instances, were attached to the periosteum, or perichondrium. The frontal sinuses contained a jelly-like secretion, and a number of similar granules, and on the septum narium

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was an ulcer exactly like those which I have seen in the nostrils of glandered horses, and upon it lay a cluster of granules.

Two or three very large white circular elevations were found immediately below the sacculi laryngis; Mr. Youatt, who was present, called them "true glanderous chancres."

About an inch below the valve of the colon, for three inches in extent, on the whole of the surface, were white granules, exactly like those in other parts.

Dr. Elliotson concludes by remarking on the probable frequency of similar occurrences; and states that, since the publication of his former paper, upwards of a dozen cases have been related to him by medical men, which they are now satisfied were instances of glanders.

A very characteristic plate accompanied Dr. Elliotson's paper.—*Dublin Jour.*

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31. *Remarks upon the Treatment of Typhoid Fever, and upon the Benefit that may ensue from the use of Coffee in that Disease.*—Although typhoid fever, which has been designated in so many ways, has for a long time been the object of the study of medical men, yet the uncertainty which still remains in science about that disease, and the difference of opinions of several great men as to its nature, sufficiently prove that it is not perfectly understood. Could all its malignity reside, as Baglivi said, De Febribus Malignis et Mesentericis, in phlegmon or erysipelas of the intestine? Would not the nervous system be directly affected? or would not the fluids of the economy be impregnated with certain deleterious principles which would contribute to aggravate the symptoms, as might be believed from some works recently published? New facts, well observed, will, perhaps, succeed in throwing light on these important points of the history of that affection, and to give a solution to these questions. We propose solely, in these remarks, to show that the remarkable and painful influence which the brain experiences in that disease, is susceptible of being, in some cases, advantageously modified by the use of a therapeutic agent rarely employed, although simple, and the effects of which are known; I am speaking of coffee. There are circumstances in which the substraction of a symptom is a thing of sufficient importance to try to obtain it, but the suitable and opportune occasion must be seized, for care must be taken not to make that therapeutic common to symptoms, the folly and danger of which may be easily demonstrated.

Moderate anti-phlogistics and emollients are for us the means most generally useful in the treatment of typhoid fever. Extolled by Baglivi and Professor Broussais, we have employed them with success in every case where, to the inflammatory symptoms presented by the digestive organ, continued fever of a remarkable intensity was joined. We have also observed the good effects of tonics administered by M. Petit, at the hotel Dieu, in cases of entero-mesenteric fever. Out of eleven very severe cases which I collected, during the third quarter of the year 1820, being clinical assistant to that distinguished practitioner, four cases terminated in death, and seven were cured. The patients who form the subject of these last observations had, in general, febrile symptoms accompanied with a very sensible remission in the morning, and the abdomen with them was not the seat of very considerable sensibility, or, when that happened, the judicious practitioner, of whom we have just spoken, ordered leeches to be applied, ordinarily round the anus, and suspended for the time, the tonics. I have since sometimes employed the same remedies, taking into account the two circumstances which I have just noticed; a marked remission of the febrile symptoms, and the slightly developed sensibility of the abdomen: I had only to felicitate myself in the greatest number of the cases; but, it must be allowed, these cases are much less numerous, than those in which emollients ought to be prescribed in preference.

We have approximated these two opposed treatments of the same disease, for the purpose of proving that it is important for therapeutics to know the different shades of an affection, and to bear them in mind in the treatment which ought to be adopted; several other indications have been followed with more or less success in the treatment of typhoid fever, of which we shall not speak,

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wishing only to occupy ourselves at present with the cases in which the infusion of coffee appeared to us to offer unquestionable advantages.

Obs. I. Julienne, aged twenty years, of a strong constitution, having come from La Côte-d'or to Suresne, to work in the fields, felt, after some days, a sensation of lassitude, which she endeavored in vain to overcome. The 10th of June, 1831, eight days after the illness commenced, she entered the Beaujon Hospital, Sainte-Eudalie's ward.

The 11th she was in the following state:—decubitus on the back, countenance sunk, severe pain in the front of the head, intellectual faculties heavy and as if stupefied, tongue red at the sides, severe thirst, pains of abdomen more intense at the ileo-cæcal region than the other parts, cough, râle sibilant, chest sonorous, pulse full and frequent, intense heat of the skin. Twenty leeches were applied to the right iliac fossa, emollient fomentations, barley water, cough mixture, enema, diet, &c.

The following days the abdominal symptoms experienced a sensible amendment, but the headache increased; the continuation of diluents, the application of compresses, wetted in cold water, to the forehead, the employment of the pediluvium, did not diminish it. The intellectual faculties continued dull, but the proper answers of the patient when they succeeded in arresting her attention, the absence of delirium, and of injection of the eyes, prevented my suspecting meningitis; the weakness supervening in the pulse contra-indicated any additional abstraction of blood. The 14th I prescribed an infusion of two drachms of coffee in six ounces of water, to be taken at different times before the febrile exacerbation; the means precedingly ordered are continued.

15th. A marked diminution of the headache, of the drowsiness and sinking of the intellectual faculties; no change in the other symptoms, unless a slight augmentation in the frequency and force of the pulse.

The 16th. Profuse perspirations. The infusion of coffee, continued to the 19th, maintains a satisfactory state of the intellectual faculties.

This young girl's complaint was very severe; the coffee does not prevent the development of the common accidents of typhus fever. Lumbrici appear in the clothes, these augment without an increase of the pain in the abdomen; prostration more considerable; cough more frequent; a crepitus developed in the left side of the chest, requiring the use of dry cupping-glasses to the part: it was only after having had several sweatings, and after presenting a large escar on the sacrum, that the girl commenced to improve in health.

I do not think it would be more rational to attribute to the use of the coffee, the prolongation of the disease, than it would be to regard that infusion as the cause of the development of the lumbrici in the intestinal canal; this long duration is often independent of the treatment, and it is to be observed just as well in patients treated by simple mild drinks. The effect of the infusion of coffee on the headache, was too rapid and too remarkable not to have been noticed by those who attended to the case. We had too well appreciated the relief which the patient experienced by the cessation of the headache, not to have recourse to the same treatment when a similar case should present itself. Such a case soon offered itself to our practice.

Obs. II. A carpenter, twenty-five years of age, of a strong constitution, experienced, the 22d of July, 1832, a headache, nausea, vomiting, purging, and pains of the abdomen; he kept his bed, and applied some leeches to the abdomen; not finding himself improved, he decided, on the 30th of July, to enter the Beaujon hospital.

31st of July. When we saw him, his countenance was sunk, tongue red, great thirst, not much pain of the abdomen; he had nausea and purging; the pulse not frequent, was dicrotous; moderate heat of the skin, respiration natural. Acidulated drinks, enemas, and emollient fomentations to the abdomen, produced an amelioration, which continued for two days.

The 3d. Prostration being more marked, and tongue dry, we ordered fifteen leeches to the right iliac region. Being more sunk the following day, and the headache continuing, and also stupefaction, we ordered eight leeches to be applied

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behind each ear, and cold compresses, wetted in vinegar, to be applied to the forehead. We also ordered a camphorated blister to one of the thighs, and an antimonial plaster to the right iliac region, which did not produce either rubefaction or eruption; the patient also took a mixture for his cough, with the addition of eight drops of ether.

These were followed by considerable diminution of the cerebral symptoms, which continued two days; after which, the symptoms were re-produced with still greater intensity; there was delirium, ravings, and comatous state; the pulse still continuing dicrotous. Two leeches applied to the inside of each nostril, produced a copious flow of blood, and procured, during the evening and night, an advantageous change in the state of the patient: but the following day the symptoms returned with all their severity. It was impossible now to persist in antiphlogistics: the advantages which followed their use had not continued; and moreover, the pulse was very weak and very depressed. We had then recourse to coffee as in the preceding case; an infusion of half an ounce of the powder in eight ounces of water was administered. The effect it produced was prompt; the pulse increased during the day, and the dulness of the intellectual faculties was much diminished.

The infusion of half an ounce of coffee and half a pint of water, was continued the following days; the prostration, drowsiness, and headache disappeared; the tongue became moist, thirst diminished, the abdomen remained indolent, and somewhat distended with gas; some bilious stools of more consistence, and more abundant, succeeded the purging. The 14th, the patient took some broth, and the 28th, the use of the coffee was left off, the state of the patient being so satisfactory as to allow the use of light soups. Convalescence was established, and the patient would have been discharged cured at the end of the month of August, if a scarlet fever, which had displayed itself, had not retained him in the hospital until the middle of the next month.

The salutary influence of the infusion of coffee on the diminution of the cerebral symptoms in this patient, is too evident for us to attempt to demonstrate it. The symptoms had been for the time diminished, first of all by the use of ether in small doses, and afterwards by the epistaxis artificially produced by the aid of the leeches placed at the orifices of the nostrils; but their return, and the increasing weakness of the pulse, forced us to have recourse to other means.—Nothing produced such a favorable effect as the coffee; for it was seen that during its employment, the tongue became moist, and that the functions of the digestive organs were so far improved, as to allow promptly of aliment being granted. It is a fact, when tonics are administered in typhoid fevers, and are well supported, the recovery is much more rapid than when numerous leeches and emollient drinks have been necessary during the treatment of the disease. As to the rest, the infusion of coffee appears to be little irritating to the stomach; employed in cases of cholera by M. Gueneau of Mussy, it was, that distinguished physician told me, retained well by the patients.

The following is a third case in which the stupor, still more intense than in the preceding cases, yielded nevertheless, to the employment of the infusion of coffee.

Obs. 3. Delacour, a cabinet maker, aged 19, of a lymphatic constitution, and rather weak, experienced at the commencement of October, 1832, a headache, accompanied with vomiting and purging. Leeches were applied to his abdomen, and he was relieved; a deviation which he made as to regimen, soon brought back all the symptoms. The patient entered Beaujon hospital, the 5th of October, with the following symptoms: countenance sunk, somewhat of a violet color; eyes injected; coma; answers difficult and sometimes incoherent; tongue red and dry; abdomen painful; pulse frequent; respiration a little impeded, accompanied with a whizzing noise. Blood was taken from the arm; ten leeches behind each ear. Delirium during the night.

Oct. 6th. Same symptoms, general sensibility very obtuse. However, after having pinched the patient severely, he finally answered with sufficient precision. Twenty leeches to the epigastrium, a cataplasm to the belly.

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7th. Countenance less violet; loss of sensibility still continuing; involuntary excretion of urine. Camphorated blister to one of the thighs.

8th. Diminution of the comatose state; abdomen still painful on pressure.—Twenty leeches to the right iliac fossa; fomentations.

9th. Abdomen indolent, cessation of the purging; countenance little colored; continuation of the insensibility of the skin of the extremities. It is only after prolonged and very severe pinching that the patient is aroused from his state of stupor, and briefly answers the questions addressed to him. Infusion of half an ounce of coffee in a pint of water to dissipate the cerebral collapse; application of ice to the head. During the day the patient appeared to revive, and talked.

10th. The coma and stupor returned during the night, some hours after the last cup of coffee; they continued, notwithstanding the application of ice. Infusion of half an ounce of the same powder in two pints of water.

11th. Less stupor; infusion of an ounce of coffee.

12th. General sensibility less obtuse; answers more easily; pulse less frequent; abdomen a little less painful. Infusion of two drachms only of coffee in a pint of water.

The following days the stupor gradually diminished; it was entirely dissipated on the 18th, but the abdomen still a little painful; however, the tongue is moist, and the purging has not returned. A gangrenous escar formed on the sacrum.

22d. Febrile exacerbation.—The heaviness or delirium does not reappear, but erysipelas is displayed near the left knee underneath the blister which had been some days before placed on the thigh of that side. Unctions with fresh lard.

The burning pain of the erysipelas diminished, but the redness invades all the leg and foot. These parts were enveloped with compresses wetted in vegeto-mineral water. Indisposition obliged me to quit the Beaujon hospital on the 24th. The typhoid affection was arrested in its progress, but the erysipelas extended in an alarming manner; the inflammation commenced to extend itself to the subjacent cellular tissue.

Although in this patient the stupor may have depended rather upon congestion, and still more upon a sanguineous stagnation of the brain, than upon a simple sympathetic reaction of the affected abdominal viscera on the head, however, they were able to testify the efficacy of the infusion of coffee in dissipating the drowsiness and dejection. It would be supposed that in increasing the circulation, particularly that of the brain, the coffee has, in that case, dissipated that stagnation of blood which appears to impede the cerebral functions. If the momentary return of the abdominal pains was attributed to the infusion, we confess that perhaps the dose of coffee carried to an ounce in twenty-four hours, was a little too much. As to the febrile exacerbation which appeared on the 22d, it depended on the approaching breaking out of the erysipelas; the coffee, therefore cannot be made responsible for it; nor indeed can the development of the gangrenous escar which supervened on the sacrum be attributed to it.

In the greatest number of cases of typhoid fever that we have had to treat, we have been upon our guard not to occupy ourselves particularly with the stupor, for that symptom generally improves at the same time that the abdominal pains diminish. However, it sometimes happens that in this disease we see the nervous system, struck with a kind of sideration, which claims special means capable of exciting the headache in suitable manner. This circumstance arising perhaps from the idiosyncrasy of the patients who are attacked with typhus fever, as from the cause which occasioned its development, ought not to produce more astonishment than that variety of the same affection which is relieved with more advantage by the employment of tonics than the use of emollients. It is only necessary to distinguish these cases one from another. If the efforts of nature often sport with our means, it would be, however, unphysiological to say that such happens in every case. That medical scepticism would be much more injurious than useful to the progress of the art. We believe then, that the stupor observed in the three patients which were the subject of

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these observations, may have been dissipated by other means than those which we have employed; but we conceive that the infusion of coffee had unquestionably an influence upon the cessation of that symptom. The action of coffee upon the economy when in its natural state, its good effects in megrim, in narcotic stupor, and drunkenness, ought to make one believe that patients will be benefitted by its use in some typhoid fevers. We believe these cases are those in which stupor predominates, and where there are not as yet any symptoms of meningitis; and those where the moderate pains of the epigastric region, the absence of vomiting and purging, and where there does not exist too developed a febrile reaction, indicate that the gastro-intestinal organ is in a fit state to support the infusion, the good effects of which we have established: only we think that two drachms (gros) to half an ounce of that powder infused in a pint of water, suitably sweetened, ought to suffice for the four and twenty hours, and that the moments when the febrile reaction presents itself with the least intensity ought to be preferred, for its administration.—*Bulletin General de Therapeutique.—Ibid.*

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32. *Ointment of Veratria in Dropsy, Tic-douloureux, and Rheumatism.* By A. TURNBULL.—As an advertisement has already appeared of a work which I have now in the press, on the remarkable medicinal effects of *veratria* and its compounds when applied externally, it would have been unnecessary to send you the present communication, but for the circumstance that numerous prescriptions, containing the medicine, and prepared according to my method, have been recently, and are now, in use in the profession. In answer to the numerous inquiries which have been made on the subject, and to guard the new remedy as much as possible from falling into disrepute through improper application, I have in the mean time taken the liberty of communicating through the medium of your widely circulated and highly useful journal, the following information regarding it.

It is now upwards of four years since I was led from certain circumstances to apply veratria, externally, in the form of an ointment, and the instance in which it was employed was one of the most formidable cases of general dropsy ever observed. It had resisted every medicine hitherto deemed of service in that disease; and it was not until death appeared inevitable, that the veratria was had recourse to. An ointment consisting of four grains of the alcaloid, reduced to fine powder, and an ounce of hog's lard, was directed to be rubbed, night and morning over the abdomen. In about fourteen days the patient was completely cured, and has since continued in perfect health. A particular account of this case will be given in another form. Since the date of the first experiment I have made many others: and always with equal success. Lately, the practice has been extended to the treatment of diseases of a very opposite nature, with the greatest benefit to the patients. In tic-douloureux and rheumatism, one or two applications generally suffice to remove the paroxysm, and should the symptoms return, they may again be removed with equal ease. A similar treatment is of the most material service in various affections of the heart and circulating system. For these and numerous other diseases the ointment is made with from fifteen to twenty grains of veratria to an ounce of lard, of which a piece, the size of a nut, is rubbed night and morning, from twelve to fifteen minutes each time, (as nearly as possible,) over the seat of the disease, until relief from the urgent symptoms is experienced. There are certain affections, particularly encysted dropsies, in which the ointment requires to be used for a considerable length of time before a marked change takes place; but as the various conditions to be observed in such cases, along with the collateral treatment to be employed, would occupy more space than it is intended at present to devote to the subject, the inquirer is referred to the publication itself for all necessary information.

[*London Lancet, Dec.* 1838.

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SURGERY.

33. *Internal Strangulation cured by the endermic use of Croton Oil.*—Penjat, a groom, æt. 28, and of a lymphatic temperament, had been afflicted with inguinal hernia of the right side for four years. The hernial tumor was small, and could always be easily reduced, and being frequently obliged to ride out, he constantly wore a supporting bandage. One morning on rising, he re-applied the bandage as usual, and in the course of the same day he was suddenly seized with nausea and severe colicky pains of the bowels, which increased for several days; leeches and fomentations were applied to the surface of the abdomen, and he was placed repeatedly in the warm bath. When admitted into the Hôtel Dieu, he had severe pains over the whole abdominal region, which were much increased on pressure, especially around the umbilicus, and severe nausea and vomiting. On examination, no tumor could be detected in the abdomen or inguinal region. The inferior orifice of the inguinal canal was sufficiently narrowed, which proved that the hernia was for the present reduced. There was headache, agitation, and anxiety; the tongue was moist, and covered with a yellow fur, and no thirst; he had not had any evacuation of gas or fæces for four days.

M. Sanson remarking no symptoms that warranted the performance of an operation, decided on employing the antiphlogistic treatment. Thirty leeches, with emollient fomentations, were applied to the abdomen, and he was afterwards placed in the bath. His symptoms were slightly alleviated by this method of treatment, but they soon returned again. The same remedies, with the addition of a blister on the upper part of each thigh, were continued without any relief being obtained. Five drops of croton oil were ordered to be applied to each blistered surface, and in the course of a short time there came on free and frequent evacuations from the bowels; the pains were immediately relieved after the first alvine discharge, the belly became soft, but the pulse still remained frequent. He passed a good night, and on the following morning two purgative injections were administered to prevent any attack of inflammation, and the next day he went out quite well.—*Lanc. Fran.*

[*London Med. and Surg. Journal, Dec.* 1833.

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34. *Rhinoplastic operation.*—A young man consulted M. Dupuytren some time ago, respecting an eating ulcer, which had already destroyed a considerable portion of the point and septum of the nose. Under mild treatment the sore was healed, but a disgusting deformity remained in consequence of the loss of substance.

M. D. resolved to attempt its restoration; and in this case he cut the flap from the upper lip, which was unusually thick and long. Having accurately marked out the dimensions required, an incision was made through one half of the thickness of the lip, and the flap was then dissected or sliced off, the inner surface or face of the lip being left uninjured. The flap was now "retourné" by twisting its pellicle from right to left, and secured to the raw edges of the nose by hair-pins and the twisted suture. On the sixth day the pins were removed from the lip, and on the ninth from the nose; the flap had united to the septum and point of the nose. The part where the pedicle of the flap was twisted round formed a disagreeable protuberance, which after a time was divided, and all the irregularities pared carefully away. The cure ultimately was a very satisfactory one.—*Journ. Hebdom.*

[*London Med. and Surg. Journal, Dec.* 1833.

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35. *Calculous Affections in Egypt.*—M. Clot Bey states, that calculous disorders are very common in Egypt; he has operated on forty cases since his residence in that country. The affection is a rare one among the Nubians and Abyssinians. There are two methods of performing the operation; one is the perineo-vesical, the other the recto-vesical.

In both two fingers of the left hand are carried deep into the rectum, to grasp

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and confine the stone, and to make it protrude as much as possible; a deep incision is then made directly upon it, and the fingers of the right hand are generally used as forceps to withdraw it. Very few patients die of the operation, although most of them labor afterwards under incontinence of urine.

The recto-vesical operation is the one generally performed; it is easy of execution, as a large stone may be most conveniently withdrawn, and the risk of hæmorrhage is less than in any other.

Out of the thirty-eight cases operated on by M. Clot, eleven were cured from the seventh to the tenth day after the operation; sixteen from the eleventh to the twentieth; eight from the twenty-second to the thirtieth; four from the thirty-second to the fortieth; and one from the fortieth to the fiftieth; two only died, and three were discharged with the vesico-rectal fistulæ.

M. Clot unites with Baron Larrey in ascribing the great success of the operation to the fine climate of Egypt, which is favorable to the healing of wounds, and to the constitution and temperament of the people not being easily irritated or excited. In five of the above cases M. Clot performed the recto-vesical operation; in three of these the fistulæ remained uncured. He admits that the operation is exceedingly easy of execution, and that any large calculi may be conveniently extracted, but he has abandoned it for the rapheo-vesical method proposed by Vacca, and which he has performed eleven times; the stone is extracted at the most roomy part of the perineum; no important blood vessel is exposed to the knife, and the rectum can with difficulty be wounded. The only serious objection which has been urged against it, is the danger of wounding the seminal tubes, but only one of these can be wounded, and the other remains safe and perfect.—*Annales de la Médicine.—Ibid.*

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36. *Case of Wound of the Gluteal Artery, and an Account of the Operation for securing it.* By Richard Carmichael, M. R. I. A., one of the Senior Surgeons of the Richmond Surgical Hospital.—On the 19th of the present month of September I was called upon to see Master West, aged 17, who, eleven days before my visit, received accidentally a wound of a pen-knife on the right hip, which penetrated as far as the handle would permit it to go; an immediate gush of blood followed, so strong as to dash against the wall of the chamber, near to which he was sitting. The hemorrhage was, however, easily suppressed by Mr. Atkinson of Gardiner-street, who resides within a few doors of the patient.

Three days afterwards the patient imprudently rose from his bed, walked down stairs, but had scarcely returned to his room when he felt an acute pain in the hip, followed by immediate tumefaction, which increasing from day to day, I was called upon to see him. On examination I found the entire right hip considerably swollen and firm to the feel, the skin was slightly discoloured, having somewhat the appearance that a bruise would present. The trochanter could scarcely be felt, so great was the tumefaction On measuring the two hips, by passing a tape between the thighs to the anterior superior spinous process of the ileum of each, the affected hip measured two inches more than the sound one; the upper part of the thigh was also so much swollen, that its circumference measured more, by an inch and a half, than the other; the integuments were also discoloured more or less even to the ham. The small cicatrix of the wound was situated about half an inch above the presumed situation of the upper margin of the ischiatic notch, where the gluteal artery emerges from the pelvis. No pulsation was evident to the eye, even on the most minute examination, but the strong pulsation of an aneurismal tumour was manifested to the ear by either immediate or mediate auscultation. It was evident, therefore, that the tumefaction of the hip did not depend upon the presence of matter, notwithstanding that the patient had been affected with frequent rigors from the period that the swelling took place, accompanied by foul tongue and symptomatic fever, but that it was owing to an effusion of blood, in consequence of a wound of the trunk of the gluteal artery or one of its largest branches.

As I had known instances of wounds of large arteries healing under similar circumstances, although the limb was injected with blood, I deemed it right to

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give this patient a similar chance before recourse was had to operation. I therefore directed ten ounces of blood to be taken from his arm, as the tumour was painful, and the pulse quick and hard. Draughts containing tincture of digitalis were given every sixth hour, a cold lotion was applied to the tumefied parts, and absolute rest in the recumbent position enjoined. This plan, with occasional opiates to meet pain and uneasiness, was persevered in during five days, but no benefit was derived; on the contrary, the tumefaction of the hip and entire limb was obviously increasing, and the state of the patient was so distressing, that even he himself became anxious for the operation, which was performed on the 24th of September, in the presence of Messrs. Colles, Adams, M'Dowell, Hutton, Logan, and Doctor Brown, who kindly lent me their assistance.

Operation.—The patient being placed upon a table, lying on his face, I commenced the operation by an incision five inches in length, commencing an inch below the superior posterior spinous process of the ileum, and about the same distance from the margin of the sacrum and continued it in a line obliquely extending downwards to the trochanter major. The gluteus maximus and medius were then rapidly divided, or rather their fibres separated (as the incision ran in the direction of the fibres) to the same extent as that of the integuments. The coagulated blood forming, the tumour then became apparent through the sac, or condensed cellular membrane with which it was covered. This was divided the whole extent of the incision by running a buttoned bistoury quickly along the finger introduced into the sack, and its contents, consisting of from one to two pounds of coagulated blood were emptied rapidly out with both hands into a soup plate, which it completely filled.—A large jet of fresh blood instantly filled the cavity I had emptied, but the precise spot from whence it came being perceived, I was enabled by pressure with the finger to prevent any further effusion, while that which had just been poured out was removed by the sponge. It was obviously the trunk of the gluteal artery, just as it debouches from the ischiatic notch, which had been wounded. I endeavoured, but in vain, to secure the artery by means of the tenaculum. I had then recourse to a common needle of large size, and with this instrument was immediately successful in passing a ligature around the bleeding vessel and of preventing all further hemorrhage. After having waited some little time to ascertain if the artery was perfectly secured, lint was introduced to the bottom of the wound, as it was not likely that union by the first intention would take place between the walls of the extensive cavity which contained the coagulated blood. The patient was then put to bed and an anodyne given to him.

Every thing went on favorably after the operation. On the third day the external dressings were removed; on the fourth, the greater part of the lint with which the wound was filled came away, followed by a flow of matter of good quality. On the sixth, the ligature came away, as well as the remainder of the lint. From this period the matter continued daily to diminish, and at the time this sheet went to press, (sixteen days after the operation), the patient was completely convalescent, and the wound rapidly healing.

[*Dublin Journal, Nov.* 1833.

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37. *Case of Elephantiasis of the Scrotum, weighing fifty pounds, successfully extirpated.* By M. Clot-Bey.—Ali Mahmet, gardener, forty years of age, living for the last twelve years at Alexandria, tall in stature, and of strong constitution, was received into the General Hospital on the 15th day of July, 1833, with a tumor of the scrotum, which presented the following characters: The form of the tumor was oblong and spheroidal, with a broadish base, measuring in circumference forty-four inches from top to bottom, and thirty-nine inches from before backwards; the estimated weight being from forty-five to fifty pounds. The tint of the skin was of an obscure dark-gray brown, altogether characteristic of the disease; here and there some globular granulations varying in size from a small pea to a nut seemed to sprout from its surface; an excoriation on the left side of the raphè of the scrotum gave issue to a small quantity of a colorless and inodorous serum; the tumor was not sen-

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sible when pressed lightly, but if the pressure were gradually increased it became intolerable; the patient generally feels a slight sensation of pain, which is continued, but is very feeble. The sound of the tumor is dull on percussion; there is no ballotement or resonance, only a slight shock is transmitted through the swelling, which, joined to the external uniformity of appearance, made it extremely probable that the tumor was of the same nature as those formerly extirpated by M. Clot-Bey. When the growth of the tumor had reached two years, its size was about double that of the scrotum, and up to the twentieth year of the patient's life the progress was progressive, at which time it was fully as large as a young child's head. During the four years which followed the last period indicated, there were alternations of erosion and discharge of serosity, with suppression of the discharge, constantly in the spot before mentioned, which the patient seemed inclined to regard as the point primitively affected. During the fifteen or eighteen years following, its increase was proportionately more rapid; and as the tumor advanced it brought forward with it the integuments of the penis, which was at length completely removed from view, leaving no trace of it except a small linear opening; however, by compressing the tumor, and pushing backward the pubic portion of its covering, the patient could expose the glans penis to the extent of an inch and a half; by this means he was still able to copulate, and had several healthy children by his first and second wives. In the state now described Ali Mahmet, by the advice of M. Clot-Bey, came into the hospital on the 16th of July, to undergo an operation; he was put on an appropriate regimen, and the tumor was removed on the 31st of the same month, in the presence of the principal hospital surgeons of Alexandria. M. Clot announced his intention of operating in a manner totally different from that hitherto used by him. The patient was placed in a position as for the high operation of the stone; two lateral incisions, about six inches long, parallel, and distant from each other five inches, were first made, and then united at right angles by a third incision, stretching horizontally below the orifice through which the urine flowed; by this means that portion of the prepuce, extending from the base of the glans to the extremity of the anormal orifice, was preserved for the length of an inch and a half, and turned back upon the penis. The flap was now dissected off from the penis, and turned away towards the pubes, after having been separated above from the prepuce by a transverse incision; the glans, prepuce, corpora cavernosa, and canal of the urethra, were now exposed in turn rapidly, and the operator proceeded to seek for and lay bare the spermatic chords and testicles. For this object two lateral incisions were made to circumscribe two semilunar flaps, extending from the superior angles of the first flap to the perineum; the spermatic chords were found very deeply situated in the tumor, from which they were separated with great difficulty. The two testicles were also found deeply placed, but healthy; they were likewise dissected away, and held up against the pubes by the hand of an assistant. As there was now no longer any danger of injuring essential parts, the operator proceeded to cut more boldly, and with a few more strokes of the knife removed the whole tumor, taking care to leave the elliptical flaps as envelopes for the testicles. No ligatures were necessary during the course of the operation, and only one was applied to a branch of the pudic artery after it was completed. The two testicles were now covered by the lateral flaps, which were united by several points of suture. The operation lasted about twenty minutes; the weight of the mass removed was fifty pounds; its structure was lardaceous in some parts, very loose in others, and infiltrated with serum. The whole surface of the wound was carefully surrounded by lint, sustained by compresses and a T bandage, and the patient removed to bed. He was in a depressed state after the operation, but the pulse was calm. At eleven o'clock he had some vomiting, throwing up, however, only the anodyne draught given him during the operation. At four o'clock he says he feels well, but the pulse is a little feeble.

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Aug. 1. Fever, but passed a quiet night; tongue moist, a little red; in the evening the same state, perhaps fever a little less. *Tartaric lemonade.*

2. Quiet night; pulse calm, but frequent; the dressings are taken off; one suture has given way, and a small gangrenous eschar formed at this point; the suppuration is abundant, and the pubic region is very warm and ballonée; the patient has not had a stool for four days. *Cataplasms to the hypogastric region; laxative clyster.*

3. Has had a copious stool, and passed a quiet night; the eschar has been thrown off without enlarging; the suppuration still continued abundant, but some adhesions have taken place between the edges of the wound.

4. One stool, has passed an excellent night; the pus is of a better kind than before, and the wound is cleaning; the greater part of the sutures came away yesterday evening.

5. Same state; the wound is quite clean, and of a good red color; the volume of the scrotum much diminished, and the wound is much contracted. From the 5th to the 10th the wound continued to heal rapidly; no further inflammation except that necessary to adhesion, has set in, and the patient may now be regarded as perfectly cured.—*London Lancet, Nov.* 1833.

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38. In a memoir recently read by M. Breschet before the *Academie des Sciences*, a new and effectual method is proposed for the radical cure of cirsocele and varicocele. M. Breschet had, for a length of time, reflected upon the practicability of accomplishing this object by effecting the complete obliteration of the varicose veins, and an opportunity presenting, he resolved to put it to the test. With this view he had constructed small steel forceps, so light as not to incommode by their weight, and arranged in such a manner as to admit of the pressure being regulated by a screw. To obviate any material injury of the skin, the bite of the instrument was made somewhat broad and flat, and was besides carefully padded. In the application of these forceps, the skin was pinched up with the varicose veins, while the vas deferens was left in the posterior part of the cord. One pair of forceps was then applied to the fold of the skin, and the varicose veins thus pinched up, as near to the abdominal ring as possible, and was fixed there by turning the screw, so as to make sufficient pressure to prevent the flow of blood through the veins. A second was afterwards applied, in the same manner, in the immediate vicinity of the testicle. To secure the equable operation of the constriction, meshes of charpie were interposed between the blades of the instrument and the skin. In one case in which this practice was pursued, the individual complained towards evening of a slight sense of heat in the part, and pain extending upwards to the lumbar region. He was put upon rigid diet, and was directed to keep the part constantly wet with a solution of the acetate of lead. These applications allayed the pain, and the next day it was so much reduced as to be supportable. The part of the tumor situated between the two forceps was somewhat red, hot and tumefied, but the portion included in the bite of the instrument was not more painful than other points.

At the expiration of forty-eight hours, sufficient inflammation having been excited to effect the adhesion and obliteration of the veins, the instruments were removed, and the inflammation of the parts was treated by resolvents. The compression exercised upon the skin gave rise to a small eschar, followed by a perficial ulcer, which healed in about eight days. The varicose tumor, which was at first red and tumid, gradually wasted away, and at the expiration of a fortnight, was reduced to the size of a small nut, and when pinched between the fingers, none of the venous cords could be distinguished, but the whole seemed to be converted into a simple homogeneous mass. A complete cure was accomplished in this case in about twenty days, at the expiration of which time the diseased cord was not larger than that of the opposite side. M. Breschet also reports another case, which was successfully treated by the same procedure.

[*Gazette Medicale, Jan.* 1834.

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OPHTHALMOLOGY.

39. *On the use of the Sulphate of Cadmium in diseases of the Eye.*—A minute fragment of iron, about half as big as a pin's head, sprang into the left eye of a country boy, aged ten, as he was standing in a smithy. Dr. Tott, who narrates the case, did not see the patient till a fortnight afterwards, when he was suffering from inflammation of the conjunctiva and cornea, no remedies having been used in the interval. Dr. Tott ordered the eye to be shaded from the light, leeches to be applied, and aqua saturnina to be dropped in. No trace could be discovered of the fragment of iron. In eight days the inflammation and the swelling of the conjunctiva had somewhat diminished, and the piece of iron could be plainly seen, in a small fold, formed by the swollen conjunctiva of the cornea. It was removed with a pair of eye-forceps, leeches, and saturnine lotion were repeated, and a purgative was given, consisting of calomel and jalap. The inflammation soon disappeared; but the boy's sight was clouded by a blueish spot on the cornea, which covered half the pupil. Mercurial ointment, a collyrium of sulphate of zinc, walnut oil, and a perpetual blister behind the ear of the diseased side were employed without advantage; but eight or ten drops of a collyrium of the sulphate of cadmium, (made with gr. j. to ʒ ij. of distilled water,) being now introduced into the eye three times a day, the speck was removed in four weeks, and the boy's sight perfectly restored.

The second case occurred in the same village in Pomerania as the former one. The patient was a girl about five or six years old, who had poked something into her right eye, thus causing a traumatic inflammation of the conjunctiva and cornea. Dr. Tott, who was not called in till six weeks after the accident, found that partial exudation had taken place, and that a speck had formed upon the cornea. Instructed by the event of the case just detailed, Dr. Tott used the sulphate of cadmium in the same manner, and in six weeks no trace of a speck was to be discovered in the eye of the little patient.

Both cases show that specks on the cornea caused by external violence can be removed by the same remedies which cure those which have arisen from internal causes. Hence, it is erroneous to suppose that the former cases are more difficult to cure than the latter, in which it was thought that the external remedies could be assisted by medicines intended to remove the internal cause. But the following instance shows, that even in the latter class of cases, cadmium, by itself, can effect a cure:

A boy, aged five, was suffering from a bark-like eruption on his face, of scrofulous origin, and at the same time from inflammation of the left eye. Dr. Tott administered antimonials, Plummer's powder, dulcamara, and conium, and the eruption disappeared; the ophthalmia also yielded to appropriate remedies, but a blueish white spot remained on the cornea and covered the pupil. Blisters placed behind the ear, and a collyria of zinc and lead, were of as little benefit as the continued use of antimonials and mercurials, from which Dr. Tott says he promised himself great advantage, on account of the symptoms of a scrofulous dyscrasia, which still remained. Afterwards tartar emetic ointment was rubbed in behind the ear; but this as well as all the other remedies having been discontinued, the sulphate of cadmium was now employed, and in a week had already lessened the speck. In six weeks more it would have disappeared entirely, but the parents withdrew the patient from my care, says Dr. Tott, for fear of greater expense; but it is probable that the speck, which was very small, and scarcely any hindrance to vision, is now entirely removed. It is not probable that the antiscrofulous remedies contributed to the cure, since even the eruption appeared again and all the other symptoms of a scrofulous dyscrasia continued. When inflammations depend on an internal dyscrasia, then internal remedies are necessary; but when inflammation has run through its cycle, and terminated in exudation, the speck is then a purely local relic of the cachectic inflammation; it is not itself of a cachectic nature, but is to be looked upon as a disease no longer depending on an internal cacochymia, and therefore to be treated merely by local remedies. The preceding cases show the sulphate of

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cadmium to be an excellent topical remedy, though unfortunately it is seldom used, even by those physicians who are especially devoted to the treatment of ophthalmic diseases; they talk continually of the employment of zinc, vitriolic remedies, corosive sublimate, red precipitate, &c.; and when these means have failed, as often happens, they complain that nothing was of any use, and that the disease is a *scandalum artis.* Dr. Tott, however, confesses, that in a former number of the journal he mentioned a case of leucoma corneæ in which the red precipitate ointment bore off the palm from the sulphate of cadmium: but he is convinced that the remedy as applied by him then was not so strong as what he now employs.—*Gräfe and Walther's Journal,* Band xx. Heft 2.—*Lond. Med. Quar. Review. Jan.* 1834.

MIDWIFERY.

40. *On the Effects of Mammary Irritation in Amenorrhœa.* By CHARLES PATTERSON, M.D. MARY REARDON, æt. 24 years, of moderately corpulent habit, was admitted into the Rathkeale Hospital on the 10th of August, 1832. She laboured under slight synochial fever, which, in a few days, yielded to venesection and purgatives. On the 19th August, symptoms, which were considered of a hysterical character, presented themselves, with pain in the upper and outer part of the right side of the chest. For the latter affection a small sinapism was prescribed, but from inattention of the nurse, it was made so large that it covered a considerable portion of the mamma. The sinapism remained on for half an hour.

At the visit on the following morning, the 20th August, Reardon complained that the right breast was exceedingly painful, the pain being very different in its character from that which she had before experienced. On examination, the whole side of the chest was found considerably swollen; there was slight diffused redness of the skin; and though the mamma itself was enlarged to four or five times its natural bulk, yet there was no circumscribed hardness, nor any tendency to suppurative inflammation.

On the 21st August, the right mamma and adjoining parts of the chest, were found much more enlarged than they had been at the preceding visit. The left mamma and side of the thorax were unaffected, and it was announced by the nurse, that the catamenia had that morning appeared, and were then present in considerable quantity.

The discharge, which, as the patient stated, had been for two years and a half wholly suppressed, continued to flow for two days; then it began to decline, and with it the tumefaction of the mamma gradually disappeared.

My attention having been thus accidentally directed to the practicability of exciting the torpid functions of the uterus, through mammary irritation, I availed myself of the next opportunity presented to me of again observing the effect of that operation.

Catherine Power, æt. 19 years, applied to me the 14th September, 1832, she complained of headache, languor, loss of appetite, and inability to attend to her usual business, that of a servant. She stated that about the middle of April, the menstrual discharge being then present, she incautiously exposed herself to cold in washing clothes at a river. The catamenia then suddenly ceased, had not since returned, and from that period she had been constantly subject to ill health. She had consulted different medical gentlemen, and taken a great variety of medicine with little advantage.

I directed that the clavicular half of the right mamma should be covered with a sinapism. It was allowed to remain on for thirty minutes; and on visiting her in six or seven hours after its removal, I found the whole right breast considerably swollen, hot, and painful. The next morning the enlargement of the mamma was very much increased, the tumefaction having extended to the clavicle and axilla of the irritated side. There was no hard circumscribed or prominent tumor, but a painful diffuse elastic distention of the mammary gland and surrounding cellular substance. On the evening of the day

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next succeeding the application of the sinapism, this poor girl, with much joy, reported that the catamenia had appeared. The flux having continued for two or three days in moderate quantity, she then found herself greatly relieved of the headache and other most distressing symptoms; and in a week her health was so far restored, that she ceased to require any further attendance.

In both these cases cold evaporating lotions and gentle saline aperients were employed to moderate the local phlogistic engorgement. Both patients have since continued to menstruate at the regular periods.

From the facility with which the menstrual flux was induced, in the preceding cases, it would seem that the beneficial effects, in amenorrhœa, lately observed to arise from the long continued daily application of one or two leeches to the breasts, were entirely owing to the great irritation which the leech bites had eventually produced in these organs. The abstraction of blood by leeches from the mamma, had not, according to the reports of the cases in which they were employed, the least perceptible influence over the uterine functions, until pain, heat, and excessive tumefaction of the breasts had been first developed. Phlogistic engorgement of the mammæ being then the essential step in the movement, which, in these instances, determined the flow of the catamenial discharge, it must be obvious, that for the production of the necessary irritation to effect that engorgement, the simple application of a sinapism would have been, in every respect, infinitely preferable to the tedious and troublesome process of the daily repetition of leeching.

But it must not be supposed that mammary irritation is applicable to every form of amenorrhœa. I know that it will not be successful in every case, for I have found it to fail.

Mary Fitzgibbon, æt. about 21 years, of spare habit, was affected with headache, and irregular dyspeptic symptoms. The headache permanent, with occasional aggravation; countenance and tongue chlorotic; mammæ undeveloped. The menses had been scanty and irregular from the 16th to the 19th year of her age, but during the last two years they had been totally suppressed. No apparent organic impediment.

A sinapism was first applied to one breast, and afterwards a similar application was made to both breasts at the same time. But though the sinapisms produced their ordinary effects, considerable pain and cutaneous irritation, yet the enlargement of the mammæ was very trifling, and there was no consequent uterine action.—*Dublin Journal, Nov.* 1838.

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AMERICAN INTELLIGENCE.

A case of congenital deficiency of both the upper and lower extremities, by J. F. E. Hardy, M.D., of Ashville, North Carolina, communicated in a letter to the Editor.—The subject of this deformity is a young woman, aged about twenty years. She was born without either upper or lower extremities, the situation of which is merely occupied by small rounded projections. The stumps of the shoulders are remarkably small and short; those of the thigh are much larger, but are not more than two inches in length. I think her mother has had twelve children, but she is much larger than either of her brothers or sisters. She is, indeed, of a full and plump habit, and possesses a peculiarly lively dispotion.

Her power of locomotion is remarkable. She can transport herself over the floor with considerable ease, which she does by submitting her body to a kind of rotatory motion alternately from right to left, and the contrary. By confining the handle of a broom between her chin and shoulder, she can sweep the floor with considerable dexterity. She can also set erect, lean back or rock herself in a chair, as well as another person, and when any thing is given her, she makes a sign for it to be placed upon her shoulder. If it be any solid article of food, she eats it from that situation.

Her hips and nates are remarkably full and large, and are almost square. Her breasts are also voluminous, and remarkably plump, presenting all the characters of the mammæ of a stout young female of her age. Her catamenial discharge is regular, and of the natural quantity.

The annexed wood cut will serve to convey a more accurate impression of her general appearance, than could be communicated by any description.

*** This defective evolution of the extremities has been observed under various degrees. Saxtorph* has reported a case, in which even the os innominatum was absent; and one has been described by Martin,† in which the outer third of the clavicle was wanting.

More frequently, the pelvis and shoulders are properly formed, but the rudiments of the extremities merely represent small excrescences or projections, covered with a smooth skin, and with or without nuclei of bone within. Cases of this kind have been reported by Buchner. Duverney,‡ Isenflamm,§ Dupuytren,‖ and others.

Still more frequently, there is an absence of the arms, forearms, thighs and

* Gesamm. Schriften von Scheel, Kopenh. 1803.
† Journal de Med. tome 23, p. 458.
‡ Comm. Petrop. I. vi. p. 149.
§ Isenf. and Rosenm. Beitrag f. d. Zerglei Bde. I. p. 268.
‖ Bullet. des Sc. t. III. p. 126.

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legs; but the fingers and toes exist in a rudimentary condition, and are implanted directly upon the trunk of the body; or the hands and feet are still more perfect, but have the same kind of connection. Examples of various modifications of these conditions, have been communicated by Caldani,* Dufraigne,† Dumeril,‡ Dumas,§ Meckel.‖ Flachsland,¶ Bouchard, and others.

In all cases of the kind, the defect is owing to an arrest of development taking place before the different parts of the fœtus are evolved, and it will vary in degree, according to the advances made by the process of development, at the period at which the interruption takes place.—*Editor.*

Professor Bedford's Introductory Address, at the opening of the session of the Medical College of South Carolina, Nov. 15th, 1833.—This is an able and spirited address. Dr. Bedford very correctly remarks, that the success of every institution should depend upon the ability of its professors. Merit alone should be made the inducement to bestow patronage upon any one, and wherever it is found, it deserves its reward. We have looked with thrilling regret upon the schism which has taken place in the ranks of our professional brethren of the south: we have lamented, and continue to lament, the partizan warfare which has been so warmly waged amongst them, to the detriment of the objects which should be uppermost in the aspirations of every medical man—the elevation and dignity of his profession. We have sorrowed over the blighted prospects of an institution in which we have ever felt a lively interest, and grieve that circumstances have led to the establishment of two schools,—a measure which we fear must inevitably prove unfavorable to the prosperous advancement of either:—but with all these regrets,—with all our early associations,—with all those prejudices and attachments by which mankind is too frequently influenced, we shall not suffer ourselves to take part in the pending difficulties, but adopt that course which it has always been our desire to pursue,—to suffer merit to be the measure of success, and to leave the two rival institutions to rise or fall according to their deserts.

Professor Dunglison's Valedictory Address.—We regard this as one of the author's happiest efforts. The themes are well chosen, and treated in a very felicitous manner.

A Valedictory Address, delivered by Samuel Annan, M.D., Professor of Anatomy and Physiology in Washington Medical College, Baltimore. This is an appropriate address, and contains much good advice. We are inclined to think, however, that the author is a little out in denying to the votaries of the profession all converse with the muses. He should have reflected, that our divine art derived its origin from Apollo, who was the god of music, poetry, and eloquence; and if such were its associates at the commencement, surely there can be no harm now, in allowing that physic may have its poetry, as well as other pursuits of mankind.

The celebrated surgeon, Baron Boyer, died at Paris in November last. He lived almost through an entire century, and though poor, obscure and unknown at the commencement of his career, he triumphed over all difficulties, and attained the reputation of one of the most distinguished surgeons of Europe. Though infirm of body within the last few years of his life, he still continued to discharge the duties of *Chirurgeon en chef de la Hopital de la Charité.*—His life affords an example, amongst many others, which we would hold up for the imitation of our young professional brethren. They should not be awed by

* Memoire di Padova 1804, p. 103.
† Journ. de Med. 1782, Dec. p. 517.
‡ Bullet de la Soc. Philomat. t. III. p. 122.
§ Principes de Physiol. t. III. p. 163.
‖ Handbuch der Pathologischen Anat. Bde. I. p. 748.
¶ Observat. Anat. Path. 1800, p. 44.

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difficulties. The *summim honores* of the profession are open to all, and he who would secure them, must pursue that course which conducted the great Boyer from a state of indigence and obscurity, to the highest rank of chirurgical science.

Baron Dupuytren, who sometime since was seized with a paralysis on one side of the face, has, we are happy to be informed, entirely recovered.

There were attending lectures, during the session last passed, in the University of Maryland, 145 students: University of Pennsylvania 431: Transylvania University 263: Medical College of Ohio, at Cincinnati 114: Medical College of the state of South Carolina 104: Dartmouth College 100; Berkshire Medical Institution 104.

Endermic application of medicines. By J. Eberle, M. D. This mode of applying medicinal substances, is, I think, too much neglected in this country. Cases often occur, where, from idiosincrasy, or from accidental causes, certain medicinal agents, give rise to very unpleasant sensations when taken into the stomach; yet when applied to the surface, they will produce their appropriate medicinal effects without any disagreeable consequences. The stomach, may be too irritable to retain the medicine, or the patient from insuperable disgust, or disease of the fauces or œsophagus, may not be able without great and painful efforts, to swallow. Under circumstances of this kind, decided benefit may sometimes be obtained from the external application of medicines. Four or five months ago, I attended a gentleman, who, from the imprudent use of mercury, was affected in a most distressing way. He could obtain no sleep—his bowels were obstinately constipated—the skin dry and harsh—pulse very variable, sometimes full and hard, but more frequently very small, frequent, and tense—countenance contracted and expressive of intense anxiety: at times, severe pain in the region of the heart, with paroxysms of strong palpitation—inordinate nervous irritability—frequent nausea, and occasional vomiting. It appeared to me that narcotics were decidedly indicated. I accordingly prescribed Dover's powder, in small but frequent doses. This medicine, however, caused very unpleasant feelings in the stomach, and its effects on the general system were far from soothing. Opium alone, was next resorted to, but with no better effect. It gave rise to a distressing feeling of sickness and pressure in the stomach, succeeded by painful and frequent vomiting. After many other means had been tried, such as purgatives, diaphoretics, and other antiphlogistic measures, without the slightest benefit, I resolved to try the effects of opium applied to the skin. The cuticle was removed by means of a blister from a circular space not exceeding an inch in diameter, and about two grains of the sulphate of morphia, sprinkled on the denuded surface. In about two hours after this application I visited my patient again, and was delighted to find him cheerful, declaring that he had slept soundly and comfortably for nearly an hour, and that he was free from all unpleasant sensations. His pulse was moderately full, round and soft; his countenance placid, and his skin warm and soft. Under the daily use of the sulphate of morphia, in this way, together with the constant employment of the infusion of sarsaparilla, an occasional laxative composed of effloresced glauber salts and flowers of sulphur (two drachms of the former to one of the latter for a dose,) and a simple unirritating diet, my patient gradually regained his health.

I have repeatedly arrested the progress of intermittents in children, by a similar application of the sulphate of quinine. Indeed, I have generally found the endermic mode of applying this remedy as promptly efficacious as it usually is, when taken into the stomach. By these observations, I do not, of course, pretend to offer any thing new to the profession. Every medical practitioner knows, that many of our medical agents may be efficaciously applied to the external surface; but, I apprehend that this mode of employing remedies is often neglected, in cases where it might be resorted to with great propriety, and doubtless, sometimes with very beneficial results.

[*Western Medical Gazette, March,* 1834.

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GRADUATES OF THE UNIVERSITY OF MARYLAND FOR 1834.

With their places of residence, and the subjects of their respective Theses.

Maryland.

1	Thomas J. McGill,	on Marsh Miasmati.
2	Augustus Barnum,	on Pleuritis.
3	James C. Palmer,	de Vita.
4	John C. Richards,	on Consumption.
5	John Harrod,	on Lateral Curvature of the Spine
6	Albert G. Welch,	on Antimony.
7	Ellis Hughes.	de Hydrothorace.*
8	William T. Boyd,	on Hæmoptysis.
9	Samuel F. Newcomer,	on Dyspepsia.
10	Thomas E. Bond,	on Malaria.
11	John Oswald,	on Delirium Tremens.
12	William Ghiselin,	on Epilepsy.
13	William B. Rowland,	on Apoplexy.
14	Thomas B. Harris,	on Cynanche Trachealis.
15	John Turner,	on Hepatis.
16	John F. Monmonier,	de Abortu.
17	John T. Boteler,	on Billous Fever.
18	Thomas J. Franklin,	on Lithotomy.
19	Carlton S. Sams,	de Concoctione.
20	Joseph Flint,	on Yellow Fever.
21	Francis Butler,	on Rheumatism.
22	Alex. H. Tyson,	on the importance of Legislative enactments for the suppression of empiricism.
23	James A. Muse,	on Cellular Tissue.
24	Michael J. Stone,	on Emetism or Vomiting.
25	Wm. H. Stokes,	on Gastro-duodentis.
26	George J. Robertson,	on Cholera Infantum.
27	C. C. Brown,	on Purgatives.
28	Charles H. Ohr,	on Inflammation of the mucous membranes.
29	Hiram King,	on Medical Theories.
30	John F. Leigh,	on Therapeutics.
31	Nicholas J. Hutchins,	on Menorrhagia.
32	William R. Sanderson,	on Syphilis.
33	Thos. Edmondson, Jr.	on Electro-Magnetism.
34	James Power,	on Eupatorium Perfoliatum.

Pennsylvania.

35	Wm. C. McPherson,	on Cholera Infantum:
36	Wm. L. Watson,	on Osteology.
37	Saml. E. Boggs,	on Puerperal Fever.

Virginia.

38	William R. Rose,	on the Influence of the mind on the body.
39	James W. Poindexter,	on Inflammation.
40	Charles L. Ashton,	on Epilepsy.
41	James L. Cabell,	on Chronic Nervous Diseases.
42	Joseph G. Hays,	on Scarlet Fever.

* The medal for the best Latin Thesis was awarded to this gentleman.

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North Carolina.

43 A. M. Osborn, on Milk-sickness.

South Caroliua.

44 William G. Mills, on Apoplexy.
45 John H. Brown, on Apoplexy.
46 William Stanton, on Dyspepsia.
47 Lingard A. Frampton, on Hydrocyanic Acid.
48 Samuel J. Carr, on Lepra Tuberculosa.

Georgia.

49 Henry A. Grant, on Gastritis.

Kentucky.

50 Basil Duke, on Pneumonia Biliosa.

Ohio.

51 Theodatus Garlick, on Chronic Enteritis.

Mississippi.

52 Josiah N. Wilson, on Spasmodic Cholera.

The Honorary degree of Doctor of Medicine was at the same time conferred upon the following gentlemen, who had been previously proposed by the Medical Faculty.

Dr. Joseph Gazzam,	Pittsburg, Pennsylvania.
Dr. M. H. De Leon,	Columbia, S. Carolina.
Dr. Wm. Rogers,	New Orleans.
Dr. Otho Wilson,	Montgomery county, Md.
Dr. W. G. Williams,	Louisville, Kentucty.
Dr. George W. Boerstler,	Frederick county, Md.
Dr. James Roberts,	Pennsylvania.

E. GEDDINGS, *Dean.*

SOUTHERN SCHOOL OF PRACTICAL MEDICINE.

It has long been a favorite wish of some of our most distinguished professional gentlemen, to see established in our City, an Institution whose object it should be to afford to Students, during the summer months, the same advantages in the prosecution of Medical Science which are offered in most Northern cities. It is thought that by giving facilities here to such as may be disposed to study Medicine in its practical application to diseases, many would be enabled to attend, whose means might be inadequate to a residence in more distant places. And the spirit of the times seem to call upon us for exertion, that we may not be outstripped in the race of honorable competition.

In accordance, therefore, with these views, and under the auspices of the Trustees and Professors of the Medical College, of the State of South Carolina, the subscribers hereby announce to the public that a SOUTHERN SCHOOL OF PRACTICAL MEDICINE has been organized in this city: and they feel assured that their claim upon public confidence cannot be unfounded, when they offer as their guarantees the highly distinguished body above mentioned.

T. L. OGIER, M.D. Lecturer on Anatomy.
WM. T. WRAGG, M.D. Lecturer on Surgery.
JAS. P. JERVEY, M.D. Lecturer on Physiology and Practice of Medicine.
JNO. BELLINGER, M.D. Lecturer on Obstetrics.
THOS. M. LOGAN, M.D. Lecturer on Materia Medica.
F. LEITNER, M.D. Lecturer on Chemistry.

The Lectures will be commenced on the second Monday in April, in the Hall of the Medical College of the State of South Carolina, and be continued three months.

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The terms are for each ticket as follows: Anatomy, $8; Surgery, $7; Physiology and Practice of Medicine, $10; Obstetrics, $5; Materia Medica $5; Chemistry $10. A Matriculation fee of $1 will be required from each student. Dr. Leitner will also deliver a course of Lectures on Botany, tickets $5.

JAMES P. JERVEY, M.D. *Sec'ry.*

The Faculty of the Medical College of the State of South Carolina highly approve of, and warmly recommend to the attention of Southern Students of Medicine, the proposed course of Summer Lectures, of which the prospectus is set forth above. That it will constitute an important addition of the various means of instruction already within their reach, no one will doubt, who knows, as we do, the talents and zeal of the gentlemen whose names are offered to the public as Teachers of the several branches of the Medical profession.

We fully believe that nothing will be wanting in the performance of the duties which they have pledged themselves to fulfil. During the spring and early summer, which they propose to occupy, the mind and body are both active and ardent, and all studies can be prosecuted to peculiar advantage. The opportunities which will be offered in every department, are such as will amply reward the diligent and assiduous votary of Medical Science. In the Library of the College, and in those of the Lecturers and their friends, an easy and abundant access may be had to all books of necessary or useful reference; while in the Infirmary, patients may be daily seen whose cases will offer a variety of interesting observation.

We hope that the effort thus made will meet with the merited success. We have anxiously wished to see such a course of Lectures filling up the long period which intervenes between the usual Exercises of the regular schools, and which, to Students both of town and country, consists but too frequently of months unprofitably spent, and destined to be deeply regretted.

(*Signed*)

S. H. DICKSON, M.D. Professor of Institutes and Practice of Medicine.
HENRY R. FROST, M.D. Professor of Materia Medica.
JOHN WAGNER, M.D. Professor of Surgery.
THOS. G. PRIOLEAU, M.D. Professor of Obstetrics.
EDMUND RAVENEL, M.D. Professor of Chemistry.
J. E. HOLBROOK, M.D. Professor of Anatomy.
JAMES MOULTRIE, Jr. M.D. Professor of Physiology.

THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

The Annual Convention of the Faculty will be held on Monday, June 2nd, 1834, at 10 o'clock A. M., in the Athenæum. Members of the Faculty are particulary requested to be punctual in their attendance.

Professor Geddings is expected to deliver the Annual Oration before the Faculty, at 5 o'clock P. M., on the same day.

JOHN FONERDEN, *Rec. Sec.*

LECTURES ON ANATOMY AND PHYSIOLOGY,

BY A. L. WARNER, M.D.

The subscriber will resume his course on Anatomy and Physiology, on Monday, November 4th, to continue four months.

The dissecting room will be opened for the reception of classes on Monday, October 21st, when every facility will be afforded for the prosecution of *practical anatomy.*

Lectures on General, Special and Pathological Anatomy and Physiology; with the privilege of the dissecting room, - - - - $10

Admission to the Lectures, without the use of the dissecting room, - - 5

Private pupils will be received at the usual rate; who shall have the use of a commodious office, and a valuable medical library.

Baltimore, April, 1834.

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BALTIMORE

MEDICAL AND SURGICAL

JOURNAL AND REVIEW.

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EDITORIAL NOTICES,

And acknowledgments to Correspondents.

In bringing our second volume to a close, we terminate the first year of our editorial engagement. Considerations beyond our control oblige us to relinquish the further prosecution of the scheme. It cannot be sustained, except at a sacrifice of labor and pecuniary interest greater than we can devote to it; and the experience of the past year has realized the conviction, that the time requisite in the discharge of our editorial duties is so considerable, as to infringe upon engagements and pursuits which have a stronger claim upon our attention.

In taking leave of the public, we return our heartfelt thanks to those who have patronised our exertions, and to our contributors, (*unfortunately few in number,*) who have obliged us by the communication of their labors to our pages. Nor can we suffer this opportunity to pass, without tendering our grateful acknowledgments to our fellow journalists, from all of whom we received a cheering welcome into the field, and who have likewise spoken of our labors, at different times, in terms of high commendation.

We have endeavored to redeem the pledge we made to the public, and have not only labored zealously to furnish them the most valuable intelligence we could select from our home productions, but likewise to put at their disposal the most important facts and speculations which have been developed abroad. In the execution of this latter design, we have spared neither labor nor expense. The bibliographical record attached to each number of the journal will show the extent to which we have gone in the purchase of periodicals and books expressly for our journal, the number of which has gone on progressively increasing. This will be especially manifest by a reference to our present number, which does not contain a report of more than one half the works which have come to hand within the last quarter.

Subscribers who are in arrears, will please transmit their subscriptions to Messrs. Carey, Hart & Co., as the business of the journal must be closed.

Bibliographical record, containing an account of recent publications and periodicals received for the Journal.

Handbuch der Diagnostik von Dr. K. Sundelin, Professor an der K. Friedrich-Wilhelm's Universitat und mitglied der Ober-Examinations-Commission zer Berlin.—Erster Band. Magdeburg, 1833.

Der Alp, Sein Wesen und Seine Heilung eine Monopraphie von Moritz Strahl Dr. der Medizen, Chirurgie und Geburtzhulfe, &c. Berlin, 1833.

Das Quecksilber ein Pharmakolisch-Therapeutischer versuch, von Dr. Ludwig Wilhelm Sachz, ordinlticher Professor der praktischen Medizin an der Universitat Konigsburg. Konigsburg, 1834.

Descriptio Morborum, Anno 1831. Jurini Epedemicorum, cum adversariis pathologico-therapeuticis, auctore Antonio Fr. Karpff. Vindobonæ, 1833.

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Die Operative Geburtzhulfe von Dr. Hermann Friedrich Kilian, Ordentlich. offentl. Professor der Geburtzhulfe Klinik an der Rheinisch. Fried. Wilh. Universitat, &c. 2 vols. Bonn, 1834.

De Influentia Morbo Anni, 1833, commentatio, &c. Justio Radius, Lips. 1833.

Doctrina Veterum de liene, ex locis Medicorum principium digesta, auctore Sal. Levi Steinheim. Hamburg, 1833.

De Morborum Febrilium Diagnosi: Tentamen Nosologicum, auctore Eduardo Augusto Lehmann, Med. et Chir. Dr. Berolini, 1833.

Symbola ad curationem Phthiseos emendandam Commentatio qua viro perillustri Christoph. Guielielmo Hufeland Doctoratus in Medicina Imperatri Semisecularia gratulatur, &c. interprete Ludovico Guielielmo Sachz, Facultatis Medicæ H. S. Decano. Regimontii, 1833.

Hanbuch der Menschlichen Anatomie; durchaus nach einigen untersuchen, &c. von carl. Fried. Theod. Krause, M. D. Professor der Anatomie, &c. Erst. Band. Hanover, 1833.

System der Chirurgie von Fr. von Walther, &c. Erst. Band. Berlin, 1833.

Med. Doct. Obst. Magistri Stanislai Toltenyi de principiis Pathologiæ Generalis Libri vi. vol. 1 & 2. Vindobonæ, 1831.

Lehrbuch der Psychologie von Dr. Friedrick Edward Beucke, Professnr an der Universitat Zu Berlin. Berlin, 1833.

Ueber den Zustand der Heilkunde und ueber die Volk. Krankheiten in der Europaischen und Asiatischen Turkei, von Friedr. Wilh. oppenheim, Doct. der Med. &c. Hamburg, 1833.

Zur Vergliechenden Physiologie des Blutes, &c. von Rudolph Wagner, Professor der Medizin Zu Erlangen. Leips. 1833.

Annalen der Chirurgeschen Abtheilung des Allgemein Krankinhauses in Hamburg. Herausgegeben von J. C. G. Fricke, &c. 2 vols. Hamburg, 1828.

Das Krankenexamen, ein Taschenbuch fur Junge Arzte Zum Gebrauch am Krankenbette, herausgegeben von Dr. Karl. Sundelin, Prof. &c. Berlin, 1833.

Taschenwörterbuch für practische Augenarzte nach den vielfoltigsten Klinisch Erfahrungen, &c. von E. Alltschuhl. Doct. der Heilkunde, 2 vols. Wien 1833.

Allgemeine Krankheitzlehre von Dr. K. F. H. Marx, Ordentlichen Professor der Medicine in Gottingen, &c. Gottingen, 1833.

Die Tanzwuth, eine Volkskrankheit im Mittelalter, nach den quellen für Arzte und gebildite Nichtärzte bearbeite von Dr J. F. C. Hecker, Professor an der Friedrich-Wilhelm-Universitat zu Berlin, &c. Berlin, 1832.

This very interesting historical exposition of the *dance-mania* or *dance-enthusiasm*, which pervaded many parts of Europe like an epidemic, during the middle ages, has been handed to us by our esteemed friend Dr. J. I. Cohen, of Baltimore, who is indebted for it to the polite attention of

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the distinguished author, Professor Hecker of Berlin. We regret that we cannot, for want of room, insert an analysis of its contents, which we had prepared.

We are informed by Dr. Hecker, that this singular affection made its appearance about 1374, *and that multitudes of both males and females, who were affected with it, continued to dance for hours together in the most wild and extravagant manner, until they fell down convulsed, or in a state of exhaustion and insensibility. It spread rapidly throughout many parts of Europe, and was denominated the dance of St. John, St. Vitus, Tarantismus, &c.*

Memoires Chirurgicaux des differentes espéces D'Anéurysmes, présenté à l'Académie Royale des Sciences, le 8 Octobre, 1832, par G. Breschet, Chirurgien ordinaire de l'Hotel Dieu et consultant du Roi, &c. avec six planches. Paris, 1834, 4to.

Eleméns de Zoologie ou Leçons sur l'Anatomie, la Physiologie, la classification et les meurs des Animaux par M. H. Milne Edwards, M. D. Prof. d'Histoire naturelle au College Royal de Henri IV. &c. Paris, 1834.

Traité D'Anatomie Pathologique par J. F. Lobstein, Professor de Clinique interne et d'Anatomie pathologique à la Faculté de médecine de Strasburg, &c. Tome 2 continant l'anatomie pathologique spéciale. Paris, 1833.

Sul, commercio Sanguigno tra la madre e il Feto; Lezione de Tommaso Biancini, Prosettore e repittiore di Notomia umana nell, I. E. R. Universita di Pisa, 1833. (*From the author.*)

Copland's Dictionary of Practical Medicine, No. 2. American edition, Boston, 1834, Lilly, Wait, Colman & Co. (*From E. J. Coale & Co.*)

We noticed this valuable work in our last number.

Transactions of the Medical Society of the State of New York, vol. 2, part 1. Albany, 1834. (*From the Society.*)

We should be much pleased to see some of the multifarious medical societies of our country, emulating the example so ably acted upon by the medical society of the State of New York. In the publication of its transactions, from year to year, that association is not only contributing to the improvement of the profession within its limits, but adding valuable stores to medical science.

The principles of Physiology applied to the preservation of health, and to the improvement of physical and mental education, by Andrew Combe, M. D. Fellow of the Royal College of Physicians of Edinburgh. New York, 1834. Harper & Brothers. (*From E. J. Coale & Co.*)

This highly interesting and valuable little volume, which has been published as one of the family library, deserves to be meditated by all classes of readers, because all are concerned in the topics of which it treats.

Journal der Pracktischen Heilkunde Herausgegeben, von C. W. Hufeland und E. Osann, for January to November, 1833.

Wissenschaftliche Annalen der gesammten Heilkunde herausgegeben von Dr. Julius Friedrick Carl Hecker, for January to December, 1833.

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Walther und Grâefe Journal fur Chirurgie und Augenhielkunde, Band xx. stuck 1, 2 and 3. 1833.

Rust, Magazin fur gesammt. Heilkunde, for January to Nov. 1833.

Archives Generales, for Oct. Nov. Dec. Jan. Feb. and March, 1834.

Revue Medicale, for Oct. to March, inclusive, 1834.

Encyclographie des Sciences Medicales: reimpression Générale des ouvrages pereodiques sur ces sciences, publiés en France, from the commencement, to February, 1834.

This work is published in monthly volumes, at Brussels, and contains a complete reprint of about 15 *French periodicals, at less than one fourth the original cost:* 18 *volumes have already appeared.*

The Edinburgh Medical and Surgical Journal, for April, 1834.

The Dublin Journal for Medical and Chemical Science, for March, 1834.

The Medical Quarterly Review, London, for January and April, 1834.

The London Medical Gazette, for January, February, March, April and May, 1834.

The London Lancet, for January, February, March and April, 1834.

The London Medical and Surgical Journal, for January, February, March, April and May, 1834.

The Monthly Journal of Medico-Chirurgical Knowledge, for November, December and January.

This is a new Journal which is published simultaneously in the French, Italian, German and English languages. It promises to take a respectable stand, but we would advise those who have the management of the Euglish edition to endeavor to correct the mongrel,—half English, half Gallic dialect, which pervades the three first numbers.

The American Journal of the Medical Sciences, for April, 1834, (in exchange.)

The Boston Medical and Surgical Journal, for April, May and June, (in exchange.)

The Western Medical Gazette, for April, May and June, (in exchange.)

The two last numbers of this periodical present considerable improvement, both in matter and form.

The Transylvania Journal of Medicine and the Associate Sciences, for March, (in exchange.)

Considerable improvement has been made in the mechanical execution of this Journal.

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BALTIMORE

MEDICAL AND SURGICAL JOURNAL.

ART. I. *Practical Reflections on Cholera.* By JOHN P. HARRISON, M.D. of Louisville, Kentucky.

THE frequency with which this important subject has been forced upon the notice of the profession, through the pages of our periodical literature, is a sufficient indication of the interest felt in the investigation of the disease. The sweeping desolation of the epidemic; its mysterious power of diffusion, and still more mysterious circumscription of agency to certain localities; its rapid onset, and speedy departure, and its onward career of destruction, seemingly alike uninfluenced by cold or heat, humidity or dryness of atmosphere, are features of its character entitled to our notice. The very mystery and enigma of its character as an epidemic, instead of producing diffidence of mind in those who have speculated on its laws of propagation, have only more keenly incited the prolific imagination of those who have endeavored to penetrate its nature, and unravel its yet inextricable mazes. By almost universal concession, the atmosphere is regarded as the vehicle through which the cholerifacient agent, whatever it may be, acts on the human constitution. But having placed it there, the difficulty seems lessened but in a subordinate degree as respects the real morbific material which generates the disease. Neale, drawing at once on the copious treasury of his fancy, attributes the disease to animate contagion, or animalcules, as he says, which spread themselves through the atmosphere like clouds of invisible locusts. Orton, though on the whole a very judicious writer, has permitted his mind to deviate far from the sober tract of sound observation, and delivering it up to the guidance of a false philosophy, has

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learnedly, yet very inappositely, told us of the apogee and perigee of the moon, of sol-lunar influence, of electrical mutations of the atmosphere, of the *cholera cloud*, and to uphold his air built and extra mundane position has brought in contagion to explain some residual phenomena, not perfectly explicable by the first enumerated causes. Some of our countrymen of miasmatic celebrity, who fancy they see paludal exhalations at work at all seasons of the year in the production of all kinds and conditions of morbid actions, are quite at home in accounting for cholera when they ascribe it to the presence of marsh effluvia. With dexterous argument they demonstrate, at least to their own entire satisfaction, that if the miasmata are not evolved in the immediate vicinity of the spot visited by the disease, still they can, with M'Culloch, cite them, if not across the British channel from the coast of Holland, from some quarter accessible to their exorcism. Then the contagionists, placing their feet on the narrow and crumbling foundation of a few ill digested facts, proudly erect themselves as arbiters of the cause, and with endless iteration assert their exclusive occupancy of the ground of truth. In open violation of the ten thousand facts and arguments adverse to their hypothesis they still persevere in a predestined round of narrow observation, and whilst others are cultivating a spirit of ingenuous research, they still felicitate themselves that they hear a voice others cannot hear, and enjoy a light which beams not far from the path they tread. But a few such minds, let it be said to the honor of our profession, there are; the diligent study of the laws of epidemic cholera having dissipated the mists of contagious doctrine which once hung over its progress. In the United States, contagion can number but few men of any eminence in the profession, and those few have had their thoughts so long inured to the limited circle of long accustomed modes of thinking on the etiology of diseases, that they cannot break away from the deep worn paths of error. American medicine may congratulate itself with having among its ranks such a number of minds, who are not disposed to bow down to the patched up idols of former days. Finally, in our rapid reference to the opinions held on this part of the subject, the propagation of cholera has been attributed to an epidemic influence pervading the atmosphere. This insensible meterioration was noticed by Sydenham, and by him designated epidemic constitution. Our object forbids a further discussion on this part of the essay, and with only a few more general desultory remarks, I shall explain the views entertained by myself in

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reference to the pathology of cholera, and its relations to fever, dysentery, and a few other analogous affections. The disease made its appearance in Louisville cotemporaneously with its attack at Cincinnati. Both cities lie on the Ohio river, Cincinnati being on the north, and Louisville on the south side; the last named town being one hundred and fifty miles lower down the stream than the other. Anterior, however, to the epidemic onset of the disease in either place, a strong predisposition to bowel affections existed in both places. Slight causes would induce intestinal irritation in the inhabitants, and in one or two cases in Louisville, strong choleric symptoms were witnessed.

On the 6th of October, 1832, I saw the first case of well marked cholera maligna, which proved rapidly fatal. In the course of October the disease multiplied its seizures and victims, but these almost universally occurred among the intemperate. Out of a population at that time of fifteen thousand, about two hundred died of cholera. Occasional cases of it were seen by our physicians during the winter, but these were few and of distant recurrence. A partial return of the epidemic occurred in June, 1833, but so very light, as not to merit any distinct notice. In October, 1832, Frankfort on the Kentucky river, fifty-two miles by land from Louisville, suffered severely, and Lexington which is but twenty miles from Frankfort escaped almost entirely that year. Cincinnati was deeply distressed in both the fall of 1832, and the summer of 1833, by the epidemic. In June, 1833, Lexington was overwhelmed by the sudden and unexpected irruption of Cholera, whilst Frankfort escaped. From the above stated facts, as well as from the most careful analysis of the whole subject, we are authorised to conclude that the cause of cholera is intangible, invisible and undetectible in the present state of chemical knowledge. It resides not in the deficiency of oxygen, or the excess of carbonic acid gas, in the atmosphere,—it belongs not to the heat or cold, the dryness or moisture of the air; whatever the noxious element is, from whatever source it radiates, or from materials evolved, its agency is not out of the order and mode of operation of other deleterious substances. The laws which govern the general character of cholera as an epidemic disease, have been most assiduously studied by men of penetrating sagacity of mind, and patience of observation. As far as certainty has been arrived at in such an investigation, we are warranted in drawing the following corollaries:

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1st. That cholera is truly epidemic.

2nd. That it is not contagious.

3rd. That it has preferences for certain localities. To the elaborate works of Orton, Annesly, and others, I must refer for an explication of the above points, and proceed to the discussion of a more practical consideration of the disease.

What is Cholera? What is its best treatment?—I shall endeavor to answer both of these questions in the order in which they are put.

Pathology.—What is cholera, pathologically considered? To communicate what I have to say on this interesting point, it will be proper to advert to several of the most popular opinions entertained on both sides of the Atlantic, concerning that pathological condition of the parts affected in cholera.

Sedation, irritation, congestion, morbid state of the blood—these will be examined successively. Avoiding all physiological refinements, which, though captivating to the rapt fancy of one whose delight is in such intangible excogitations, so little subserve the essential cause of practical medicine; let us endeavor to come to some definite conclusions on each of the above respective alleged pathological states.

First, what is to be understood by sedation, and in what does it differ essentially from debility, or mere diminution of vital action. The morbific agent productive of the train or series of deranged movement, denominated cholera, is, according to the theory of sedation, a sedative, or a foreign influence directly creative of a great reduction of the powers of life. Life being the result of stimulating impressions, acting on the original susceptibilities of the organism, must undergo an impairment of its energies, and a correspondent diminution of its results be witnessed, by a withdrawment of the accustomed stimuli. But, say the advocates of this hypothesis, this is not what we contend for, we aver, that even independent of any diminution of the ordinary stimuli of life; a great, and in many instances, a rapid disease of vital power, arises from a direct sedative application. And, that subsequent to this sedative agent having been applied to the system, a manifest deterioration of the energies of life ensues, which deterioration if not fatal, brings on ultimate reaction, with the consecutive events incidental to reaction after such an application. Now this is treading in the track of Cullen; besides the explanation of the phenomena of cholera, afforded by the doctrine of sedation, is at variance with all the lights of modern medicine, and in open violation of the best as-

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certained principles of pathological action. Only substitute for the term sedation that of debility, or of the energy of the brain, diminution of Darwin's sensorial energy, and you have a retrogression of the science, from the open day light of the present era, to the twilight shades of past years. A careful avoidance of subtle physiological points, is my declared purpose in the prosecution of this discussion. I will not therefore, enter upon the perplexed inquiry of the possible existence of any sedative influence, ever being exerted on the living forces of our structure. It is apparent that both heat and cold, according to the intensity and duration of their application, compounded of the existing capacity, or susceptibility of the body at the time to receive such impressions, are both stimulants, and are both sedatives. All substances which act at all on the organic molecules, must be in their natures stimulants—or in other words, modifiers of the sensibility, or irritability of the organism. Why then talk of a primary sedative agent? Is not debility a resulting phenomenon of lessened or deteriorated vital energy—a proof and witness of the altered or deranged condition of the powers of life? The negation of stimuli—the partial withdrawment of the various causes generative of action in the body—will induce debility. The deficiency of oxygen—or of food—or of light—or the abstraction of a portion of the sanguiferous fluid, will bring on symptoms of debility, commensurately to the degree of their defective supply, or loss. But will such negative sedatives awaken morbid processes of functions, or structure, at all analogous to the derangements of function, or structure, by which cholera is characterized? Ingenuity may lavish her opulent resources of argument in the support of the theory of sedation, but she reasons but to err; and whilst employed so assiduously in weaving her brilliant web of speculation, she may appropriate to herself the motto—*strenua nos exercet inertia.*

Irritation.—Within a comparatively brief period, a new and most interesting field of investigation has been opened, by the reforming hand of the French pathologists. Beginning with Pinel, more fully developed by Bichat in his short and luminous race of glory; the doctrine of the textures, with their appropriate varieties of morbid condition, has been more fully and comprehensively stated, advocated and elucidated by Broussais, Boisseau, Andral, Louis, and their companions in this great vineyard. Though willing, and altogether disposed, to concede to these great cultivators of our science, the meed of praise so

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justly merited by them, still truth obliges us to state our belief of the injury that has resulted, and may continue to flow, from the exclusiveness of their pathological and therapeutical views. As Broussais' doctrines on irritation, possess more celebrity, and have attained a more commanding acceptance among the profession, than any other pathological views of modern times, I shall devote one or two pages to their consideration. In his proposition 242 of his Pathology, Broussais declares, "that all the axioms of the physiological doctrine, enter one into the other, and resolves themselves, as respects active diseases, into irritation, the laws of which, are the principal object of the studies of the physician." Irritation according to the physiological school, consists in the sur-excitation, or super-excitement or abnormal elevation of action, of any organ above the state of vital action necessary to the maintenance of life. Irritation may result from either. 1st. From an excess of agency exerted by external stimuli operating on some external or internal surface of the system. 2nd. Sympathetic propagation of irritation from one part to another. 3rd. Abstraction of accustomed stimuli from an organ endowed with high organic force, or susceptibility. And 4th. diminution of activity in an important organ, giving rise to irritation, or sur-activity, in other parts. Thus it appears that two opposite conditions of an organ may originate irritation, either that of direct stimulation, or of abatement of stimulation; in other words, to cover the whole ground, it is assumed, that debility may be considered either by direct abstraction of stimuli from an organ, to engender irritation of that organ, or the same organ may become irritated by the diminished activity of another organ, with which it sympathises. Stimulation creates the first two varieties of irritation, by direct or sympathetic action, and debilitation induces the two last kinds by direct, or sympathetic action. Broussais, and his more devoted adherents, contend that every variety of morbid action, springs from difference in the degree of irritation of the organs; that, in other words, disease in this sense is a unit, admitting of degrees, but not of essential peculiarities, of irritation. The reader is referred to Goupil, Broussais, and Boisseau for a more ample explication of the doctrine of irritation. It is clear from the foregoing exposition, that all deranged irregularities of the body arise from debility and stimulation; that like Brown and Rush, the advocates of irritation, contend for the unity of all the disturbances to which human health is liable, but unlike the "child of genius and misfortune" and our illustrious countryman, they assert that some

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local organic aberration is at the foundation of all departures from normal action. The French pathologists, reject the opinion generally entertained by British and American physicians, of functional disease, independent of organic lesion. Andral, however, appears to have a more correct conception of the diversified modes in which departures from healthy action may take place, than Broussais. The term irritation, is employed in as indiscriminate and indefinite sense, by many French writers, as that of debility was by Cullen, or excitability and excitement by Brown, or congestion by Armstrong. Like the universal *à parte rei*, of the old metaphysicians, such words enjoy for a season, a talismanic dominion over the minds of those who adopt them; and enthusiastic admirers of a great man's favorite theory, are apt to consider that nothing is true, but what they find embraced in their little orb of irritation, or congestion, or sympathy, and in the spirit of Wirdig, are ready to exclaim *universa natura magnetica est.*

Congestion.—The pathological state called by Dr. Armstrong, congestion, had by other writers often been vaguely referred to as the proximate cause of disease, but it was the eloquent productions of that author which gave form and animation to that doctrinal opinion. The instance furnished of the imprecision and confusion of medical phraseology by the ingenious and acute author of practical illustrations of typhus fever, is signally illustrative of the great importance of accurate and definite nomenclatural distinctions. To show that there existed much discrepancy and uncertainty in the mind of Dr. Armstrong on the pathological condition of the whole, or part, of the system, denominated by him congestion, I will extract one or two sentences from his several works. "It is," says he, "the entire absence, or partial presence, of excitement, which constitutes the chief external distinction between the severest forms of the congestive typhus; as they all coincide in oppressing the functions, or in deranging the structure of some important organ, by an almost stagnant accumulation of blood in some part of the venous system." Arterial excitement, according to Dr. Armstrong, being an excess, and venous congestion a deficiency, of natural action, in the pathological condition called congestion a remora, or arrest of blood takes place in the veins, giving rise to a preternatural accumulation, and consequent almost entire stagnation of blood in the venous tubes. And yet in his work on pulmonary consumption, the following sentence is found: "It necessarily follows that when the energy of the heart and

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arteries is much diminished, that they cannot maintain the natural current of arterial blood, and of course a proportionate accumulation takes place in the veins; and this venous accumulation appears to load and stimulate the capillaries of the arterial system, by retarding the return of the blood through them."—p. 159.

According to this theory of venous congestion admitted above, as is seen from the last sentence of the extract, congestion is inflammation, as is more explicitly stated by the distinguished author in the following quotation from his work on typhus, under the head of common continued fever. "The action of one artery," says the Doctor, "I have never known greater than that of another, and what we call increased action is, I suspect, merely increased accumulation, and what we call increased determination is, I also suspect, merely an increased volume of the vessels arising from an impediment to the return of the blood from the quarter to which those vessels lead." Now agreeably to the views entertained by Wilson Philip, and others, congestion always occurs in inflammation, so that we perceive on Dr. Armstrong's own admission and statement that there is really no essential difference between them. Four separate conditions may be readily mistaken by the precipitate congestionist for his favorite venous accumulation of blood.

1st. Sympathetic derangement of the system from the presence of ingesta, or worms, or from uterine, or other functional disorder of any important or sensitive organ.

2nd. Constitutional shock from a serious injury to a limb, or from extensive burns, or a surgical operation.

3rd. Suffocated excitement: such is given by Sydenham in a very interesting case, where bleeding developed the activity of the heart, when the patient was apparently moribund.

4th. Collapse of the vital powers in the last stage of fever.

Morbid state of the Blood.—A boundless terra incognita is presented by the mass of circulating vital fluid, contained in the arteries and veins of the animal machine, which our fond visionaries and romance writers on medicine have peopled with every variety of direful foes to the weal of the body. Sometimes animalcules are made to sport in cruel triumph along the conduits of life; at other times the blood is wrought into woful chemical changes, and is thickened into a dark spissitude or lentor, or thinned into a mere cruor, according as the mind of the novelist is troubled with "thick coming fancies," or is elated by etherial visions. One will gravely write by the hour of impregnations,

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foreign infusions, and certain mysterious, but yet unappreciable revolutions in the vital fluid. Another will dwell with infinite complacency on the horrible blackness of the blood, which he finds dark as Cerberus, and fit only for congestions, collapses and death. But a still additional writer shall entertain his readers, very little at his own expense of research, by expatiating over the ground of an ill defined and misty space, from which he imagines he descries in clear perspective both territories of humoralism and solidism. Such a ready scribe speaks you fair, and tells you in grandiloquent phrase of the possibilities, nay absolute probabilities, of the blood becoming corrupted, and refers you for proof, not to the chemical analysis of any poisonous products, found in the circulating mass, but to experiments of some gentle vivisectors, who veritably force by their torturing process, foreign materials into the blood vessels. Medicine *is called* by these gentlemen a demonstrative science—aye they emblazon it by the proud titles of an inductive and certain science,—a department of human knowledge requiring at each step of its glorious march to ultimate perfection, a precision in the collocation of its facts, and a fixedness in its positions, that can never be impaired by the revolutions of time. Fond conceit! Is not instability written on the face of our science, and shall they who yet foster the prejudices of the past, in favor of a doctrine that never has been proved, idly dream of the ultimate achievements of truth over error, when they are engaged in rebuilding the crumbling fabric reared in the dark ages of human knowledge! We demand the proofs—we require, before we give our belief to the undigested doctrines of humoralism, to see something like a rigid and scientific appeal made to analysis, and demonstration. Who ever appeals to the chemical changes of the elementary constituents of the blood either during life, or after death, for evidences of the state of morbid action that may be present, or has left its ravages behind?* But I have dwelt long enough on this part of my subject, I shall now attempt an analysis of the phenomena of cholera.

Epidemic malignant cholera is divisible into four stages, or stadia. Whatever the injurious substance may be, which impinges so noxiously on the system, as to excite in it a train of morbid action so fatal as the choleric, there can be no dispute but what it is general in its agency. It is upon the whole people, as the term epidemic imports, of the particular locality, at

*Far better would it be for pathology, if more attention were directed to such investigations.—Ed.

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the time being, afflicted by its visitation. Thus we have a state of predisposition engendered. This perilous liability, or susceptibility, to an attack of cholera, seems sometimes suddenly induced by the rapid activity of the materia morbi, and at other times the predisposition is of gradual formation. It is in accordance with the accurate observations of some of the most perspicacious minds in our profession, that the epidemic irruption of cholera, is like the sudden onset of the desolating tornado—coming down upon a people, without premonition, and in the course of a few hours scattering ruin and death on every side, and leaving behind, in its rapid departure, the sad memorials of its career of destruction. But ordinarily, at least in our country, it has heralded its way by those intestinal disturbances, which are, in a greater or less degree, realized by a whole community. Here then we have the first step of the disease revealed—a stage of predisposition, or what may be denominated a state or stage of incubation. Succeeding this stage of incubation there may succeed a second stadium, or stage, that of diarrhœa of a common, or peculiar character. This peculiarity, is denoted by the absence of bilious secretion, and the colliquative nature of the discharges. But predisposition may exist for days without the supervention of the diarrhœal stage. This second stage may be awakened, either by the concentrated virulent operation of the cholerifacient material, or by the application of some exciting cause, such as improprieties of diet, either in quality or quantity, or any thing which unsettles the harmonies of reciprocal relation sustained by the various organs of the economy. Instances have occurred where the true choleric action supervened on a common bilious diarrhœa, but these are to be considered in the light of deviations, or exceptions to the general order of the seizure. A third stage is that of collapse, or asphyxia, in which a sudden reduction of the vital energies takes place—the heart ceasing to beat at all, or so feebly responding to the stimulus of the blood as to give no demonstration of the circulation being continued—the skin assuming a sodden aspect especially about the fingers, and a rapid muscular shrinking producing a remarkable contraction of the face and limbs. In the fourth stage, when the patient survives the violent shock of the third stage, a subdued reaction ensues:—this is called the consecutive fever. It is characterised by a soft and rapid pulse—and a return of warmth to the surface; a partial restoration of secretory performance in the liver and kidneys, a greater disorder of the functions of relation or animal life than existed in the other stages. The intelligent reader

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is aware that though many cases of cholera may observe the above succinctly described course of attack and progression, yet that the deflections from such a rectilinear path are so numerous as to justify us in the inference that no great reliance is to be put in a plan of curative procedure founded exclusively on such a history of the disease. In the erratic movements of its attack, as well as fatal termination, cholera moves within no circumscribed orbit. And though it has laws which regulate its modes of seizure and its progressive steps of action, these laws are not to be intelligently studied by observing one or two of the varied phases of the disease, but by a diligent and painful perquisition of the whole history of the complaint, in all the diversity and complexity which have marked its way. Is there any one symptom during life, or morbid appearance seen after death, that can be relied on as pathognomonic of cholera? Take any one phenomenon, observed the most frequently in attacks of cholera, isolate it, and then determine whether or not it can be justly considered pathognomonic! Vomiting, in the epidemic as seen in Louisville, in both 1832 and 1833, was absent more frequently than either purgings, spasms, or lividness of the surface. The rice water evacuations were almost universally seen here, but one or two cases occurred in which though the stools were manifestly bilious, spasms came on, and death ensued upon diarrhœal irritation. In India, according to the report of the Madras Medical Board, "it is unquestionable, that the most fatal and rapid cases are by no means those, which are distinguished by excessive discharges. We have innumerable instances, on the contrary, of death ensuing after one or two watery stools, without the developement of any other symptom affecting the natural functions. Even collapse had come on, before any evacuation by stool had taken place."* The peculiar aspect of the patient, arising from the arrest of ventricular contractile power, is not distinctive of cholera. The shrunken and livid hue of the skin is a very noticeable phenomenon in cases of poisoning from an excessive quantity of tartar emetic. In several instances I have remarked this condition of the patient, where that potent instrument of good, or evil, has been abusively administered. In 1821, I had a patient, a girl of the town, who took a large dose of tartar emetic, and very soon drank large quantities of cold water, which brought on great irritation of the stomach. The pulse rapidly sunk, and was scarcely perceptible at the wrist, the skin assumed a

* Medico-Chirug. Rev. April, 1832, 6 p. 12.

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leaden colour, and the features of the countenance became contracted. She died after great agony, which she compared to a mountain on her breast, and upon a post mortem examination, her stomach was found extensively and intensely inflamed. The case of cholera which bore the greatest analogy to the above mentioned cases of gastritis, was that of a boatman, who died in the Louisville Marine Hospital, in October 1832. This man had been affected with diarrhœa for about eight hours, when at the recommendation of some of his companions he took a gill of brandy with a tea-spoonful of pepper in it. Very soon after his swallowing the incendiary remedy collapse came on, and in that condition he was brought to the hospital, where he died in two hours from his admittance. In this case an almost universal phlogosis of a deep scarlet hue, was visible over the mucous coat of the stomach. In both of these cases inflammatory irritation of the stomach was the origin of the symptoms which characterized each. Although Broussais and his advocates deny the existence of any irritation but that of sur-excitation, yet where cold water is drank, when the stomach is robbed of its power of successful resistance, or safe tolerance to the impression of the fluid, in consequence of a partial deprivation of vital force from excessive muscular exertion in a heated atmosphere, the symptoms presented are very analogous to the collapsed stage of cholera. Here there is irritation of the stomach, but irritation consisting not in excess of action, but irritation confined to the nervous endowment of that important viscus. Travers, in his able work on constitutional irritation has given us a more philosophical view of the subject, in its bearings on the integrity of the compages of the system than Broussais. It is clear that irritation may exist in the fibril of a nerve, either a nerve of motion or sensibility, without any sympathetic irradiation of such irritation to the blood vessels. When tetanic symptoms originate from a wound which has been inflicted in the sole of the foot by an iron nail, although this wound may have entirely healed, have we not a case of irritation confined to the nerves of motion? Pathological anatomy has hitherto been completely baffled in its attempts to trace the structural lesions to which the functional disorder of the motive nerves incident to both idiopathic and traumatic tetanus, might be in justice attributed. Recent dissections have shown that the spinal chord is not as was once alleged, the point in which the scalpel of the anatomist can detect the products of an inflammatory vascularity. The presence of ingesta irrita-

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ting the stomach, will sometimes in children bring on fatal convulsions. An emetic, a very irritating remedy according to Broussais, in such a case, when administered in time will soon dissipate all the signs of abnormal muscular effort. Gastralgic disturbances are often the accompaniments of an irritable stomach when empty. Food, nay the stimulus of wine, or opium will put an end to such a species of irritation. Debilitation of an organ, says Broussais, may induce irritation, or sur-activity of that organ, or of another part sympathising with the debilitated organ. But though the doctrine of irritation, as taught by that celebrated teacher, apparently differs so essentially from Cullen's doctrine of sedation, yet in this important principle they harmonise. By substituting the talismanic *vis medicatrix naturæ* for irritation, we have the same doctrine of debility as the original cause of inflammatory action. The same causes which produce debility produce disease; in other words debility is but a symptom of disordered action, and should never be elevated in the consideration of the etiology of diseases as an original source of functional or structural derangement. We may if we thus blindly substitute a symptom for a cause, plunge into all the absurdities of the Brunonian practice, at least in our hygeian plans. To prevent an attack of cholera, consistently with this view, like Brown, we must stimulate to keep off sedation or debility. *Dignus vindice nodus*—the difficulty requires the intervention of our theory, may be the idolatrous feeling of the exclusive admirers of such a mode of explanation. Neither sedation or debility, nor irritation as explained by Broussais, nor congestion, nor impurity of the blood, will satisfactorily account for the phenomena of cholera.

The defenders of sedation urge, that the stage of incubation is marked by a diminution of organic strength; that lassitude and debility possess a predominance in the organs of animal life, and that a corresponding prostration or impairment of functional activity, is manifestly existing in the organs of nutrition, or of organic life. And as the choleric action increases, debility increases, and when the one triumphs, the other triumphs. This is reasoning in a very vicious circle, and altogether in harmony with Brown's views of asthenic affections. But some of the advocates of debility, not willing to rest their exposition of cholera on this narrow basis, introduce some change in the blood as the starting point of all the phenomena; and even unsatisfied with two cumbrous links, they clumsily attach a third to their ill forged chain of proximate cause, and that is conges-

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tion. To unite, it would seem, as many erroneous misinterpretations of the phenomena as possible, others bring in irritation, to help out the weakness of the other three pathological fancies. Thus they have inquination of the circulating fluid, then sedation, then congestive irritation, or irritative congestion, just as their pens may most easily write the words, congestive irritation or irritative congestion at one time or another, or as it may appear more euphonous so to do. As to depravation of blood ever being present in any stage of cholera, is what cannot be demonstrated. This averment is made, even Dr. Steven's statement to the contrary, notwithstanding. A severe but judicious critic, has pronounced this sentence on Steven's book on the blood—"We solemnly declare, that we do not believe there has ever been published a medical work, containing a greater mass of reckless, unproved, and improbable assumptions, stuck together with such a putty of ridiculous reasoning."* Herman of St. Petersburgh, found, as he supposed, a deficiency of all acetic acid in the blood of choleric patients, whilst Stevens imagined he found a deficiency of salts. Dr. Christie in his experiments on the secretion from the bowels of choleric patients, detected only pure serum and fibrin—the transparent part of the fluid evacuated being serous, and soluble in cold water, and the opaque white coagulum of the choleric stool, being fibrinous, and quite unsoluble. M. Majendie, whilst in Sunderland, England, to which place he had gone to study the disease, before it invaded Paris, at the request of Dr. Joseph Brown, analyzed the intestinal discharge from a child three years old, laboring under the disease, and he informed him that it contained albumen and mucus, and was alkaline.† The practical deduction to be drawn from the discrepant results of the two analyses of Dr. Christie and M. Majendie, is, that the chemical constituents of the matter evacuated in cholera, vary with the varying action of the vessels; that the secretion is a product of the organic powers of the living solids, and not a mere mechanical exudation of the vessels. In cholera I have seen sanguinolent discharges succeed the limpid evacuations; and even a dark colored fluid, as if water were stained with common writing ink, has been thrown out of the bowels of the choleric patient. In such rare instances less imminent peril hung over the patient's destiny, than when the rice water stools were present. Accordant with the high authority, already ad-

* Medico-Chirurgical Review, Oct. 1832, p. 329.

† Cyclopædia of Practical Medicine, part 4, p. 387—Art. Cholera.

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duced, cholera may prove fatal, with little or no evacuation from the intestinal tube, either by puking or purging. Orton bears unequivocal testimony to the same fact, as the reader may see by consulting his work.* A rapid and fatal depression of the vital powers, in the most malignant attacks, extinguishes life before the ordinary manifestations of organic disturbance ensues. In consideration of such facts, and under the guidance of a cautious generalization, we are authorized to arrive at the following inferences.

First. That the deleterious agent, which generates cholera, impresses a predisposition to a certain series of morbid derangements in the body.

Second. That when this noxious or cholerifacient material is applied to the system in a concentrated manner, known to be such, by the overpowering vehemence of the epidemic seizures, then nature succumbs under the blow at once, without any of the ordinary phenomena of the malady being witnessed.

Third. That, if the stage of incubation or predisposition be carefully watched, and no exciting causes be brought in collision with the organs, no choleric symptoms will be awakened, provided the remote cause, or morbific agent be not very intense in its action.

Fourth. That although debility, irritation, congestion, taken in the sense given above, and some alteration in the relative proportion of the constituents of the blood, may all exist in a choleric attack, yet that neither one, nor all of them should be considered as constituting any thing more than a sign, or signs of the disease, and that to erect either, or all of them, into the rank of causation, is truly ὑστερον πρότερον—to put the last first. In what does this predisposition consist, if it be neither irritation, debility, nor change in the blood? I answer, that we know nothing of it, except from its phenomena—that these phenomena, are various indications of threatened disturbances of a healthy condition of the organs—a general *malaise*, and evident constitutional liability, or proclivity, to a particular train of morbid agitations of the economy. Now to call this predisposition of the system, to take on cholera, debility, or irritation, or congestion, (viz inflammation) or alteration in the blood, is to deceive and abuse our minds, by mere names. The health of the body is vigorous when debility, or impairment of strength, and irritation, and inflammation are all absent, and why? because they

* Page 29, and page 30.

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are the indications, not the causes of its disturbance. Of course, in traumatic irritation, and inflammation, or in debility from great abstraction of the stimuli of life, the above remark does not obtain. But the distinct topic of examination, at present under consideration, is that of an engendered susceptibility to a disease like cholera. There is debility present, no doubt, in this stage of incubation—and so irritation may be present, but both debility and irritation are present, only as symptoms of the constitutional tendency, to a special series of disordered movements, in certain important organs of the body. Contemplate for a moment the predisposition, either hereditary or acquired, in the system of some persons, to any particular affliction, such as gout, or rheumatism, or pulmonary consumption! The incumbent tendency to either of the above named affections, may hang upon the wheels of life, with a depressing weight, for years, before the veritable malady is revealed in its distinctive traits of morbid action. Where such predisposition exists, the powers of life are not so capable of tolerance and resistance of the various hurtful influences, emanating from the diversified excitants which are in constant operation. There even may be, the same visible tokens, of a healthful performance of the different functions of the organism, in such a case of constitutional proclivity to a particular disease, as where there exists no such speciality of bias, to take on a peculiar train of deranged motions. Shall we designate this tendency to disease, by the term debility—or by the term irritation? If we do so, we transgress every correct rule of sound philosophy, and traverse the path of an enlightened inductive research.

Fever may be instanced, as affording another correct illustration, of the same great and comprehensive principle in pathology. That there is a direction imparted to the body, to assume a certain series, or catenated train, of diseased action, by the application of febrific miasmata, no one, who has advanced beyond the prœcognita of medical science, can doubt. This fever generating agent, so modifies, and interferes with the regular physiological relations of life, as to spread a pervading liability to febrile commotions through the entire compages of the structure. Upon the superinduction of a slight inequilibrium of action in the circulatory apparatus, however induced, the phenomena of genuine fever are awakened. The disciples of Clutterbuck assure us, that the salient point of fever, is in the inflammatory state of the encephaltic mass; whilst Broussais places it exclusively in gastro-enteritis. Whence is derived the pecu-

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liar susceptibility of the animal economy, to be thus more disposed to fever, in some climates and localities than in others? Why should we have bilious remittent fever in one locality, and typhus in a different spot! Boisseau, with much intellectual adroitness, endeavors to explain the disparity observed in the several kinds of fever discussed by him, to the greater or less degree of implication to which the intestinal canal, brain, and lungs, are subjected in these different modes of febrile attack. But the question recurs, why is it that in some fevers, the brain is more liable to be inflamed—and that in other kinds, the lungs bear the onus, and that the stomach and bowels are exempted in these cerebral and pulmonary fevers, from all primary participation of organic lesion? That every wound of the brain does not create essential fever, is certain, although inflammation may occur in the membranes; and that we often see inflammation and ulceration in the mucous tissue of the stomach and bowels, without there having been any general febrile excitement, is as certain. Then why should essential fever be present at one time, and not at another; when the brain, or stomach and bowels, may be suffering under an equal, nay greater extent of inflammation when fever is absent, than when it is present. The sympathies are here brought in requisition. To deny the effective play of the sympathies, which bind in living harmony and consentient unity, the complex parts of the intricately wrought mechanism of life, would be to forego the light of all correct knowledge of human physiology. Conceding the ground to the extent required, by the advocates of the sympathetic doctrine of fever, why is it, that in some cases, these sympathies should be awakened by irritation, and that in similar circumstances of local organic lesion, they remain unmoved and unimpressed. Must we not look to something beyond mere local irritation, and the play of the sympathies, for a correct conception, and appreciation of the febrile phenomena. This primary and paramount element, is predisposition. What this state of incubation, or predisposition is, we only know, to reiterate a remark already made, by the results of a morbid disturbance of the actions of life, evinced in the process of the struggles made by the system, whilst under its dominion. To call it debility, is false philosophy, because debility may exist, without any such predisposition being present—to call it irritation, is equally erroneous, because irritation may obtain, and the organism labor under no tendency to take on a peculiar train of disordered movement,—whether it be febrile, or choleric, as the predispo-

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sition may be. The blood undergoes but one species of alteration, that has ever been proved. Conjecture should no longer indulge its flights on such a momentous subject, as that involving the dearest temporal interests of man. Who has ever seen putrid blood, just taken from a living being? though this vagary of a wandering fancy, was once placed among the verities of our science.

In pregnancy, in scurvy, in fever, and in all the phlegmasiæ, the blood is often found upon standing, to become buffy. The doctrine of the life of the blood, sustained by an irrelative quotation from the Old Scriptures, has long been a favorite figment of certain distinguished physiologists. But if blood be frozen directly after its detraction, and then melted, its coagulation is not prevented. Prussic acid mingled with blood on its emission, will not kill its supposed life, in other words, will not interfere with the chemical, or mechanical separation of its parts. In anemia the hematosine, or coloring matter of the blood, is deficient; in weak and debilitated subjects there is less fibrine found, and in all cases where the powers of life are rapidly depressed, as in cholera, the circulating mass is discovered less decarbonized or oxgenated, than in health. Let the disciples of the humoral pathology, who advance in the path of inquiry, by steps so stealthy and cautious, lest at any time, they should tread the prejudices of their predecessors under their unhallowed feet, enjoy their proudly fostered illusions, "picked from the worm holes of devouring time."

To sum up the views given above, they are briefly these:—That the remote cause of cholera, induces a certain predisposition in the system, to be affected in a particular manner—that this noxious agent acts through the pulmonary mucous tissue, on the nervous system, creating through the innervation, the stage of incubation of the choleric disturbances—that this stage of incubation is neither debility, nor irritation, nor inflammation, nor a change in the blood, but simply a constitutional liability to a particular series of morbid processes—that when this deleterious influence, generative of cholera, is intensely active, life is destroyed before any of the ordinary phenomena of cholera are developed;—that when the struggles and agitations of the vital forces are revealed under a less hurtful degree of the poison, than that which extinguishes animation; then we have the second stage of the malady; denoted ordinarily by vomiting, or diarrhœa, or both; but most frequently the latter; which left unchecked, or not spontaneously ceasing, the collapsed,

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or asphyxied stage comes on—which generally is fatal; but when slight it gives way to consecutive fever. The first stage is one of general constitutional liability—the second stage is one of disturbed functional action of the stomach and bowels, and of the collatitious viscera—the third of irritation of the mucous coat of the intestinal canal; and the fourth is one of structural lesion of the most important viscera of the body. The bodies of some persons dying of cholera, have been carefully examined, and no trace of inflammation could be detected in any organ. Inflammation is not an unvarying process, but is greatly and essentially modified by texture, by constitutional tendencies, or peculiarities, and by the nature of the cause inducing it. Thus the inflammatory process, established by an injury in a patient, laboring under the strumous diathesis, demands a treatment less actively depletory, than in an individual, affected in a similar way, who possesses the sanguine temperament. Inflammation is a series of morbid changes, and these changes admit of much diversity of type, from various constitutional as well as local causes. When an habitual inebriate receives a serious injury, although a very high degree of inflammatory excitation may be developed in the part, yet unless his accustomed stimulating potation is allowed him, his nervous system very quickly becomes so deranged in its functions, as to display symptoms closely simulative of cerebral inflammation. There are inflammations which are most successfully combatted from the beginning by stimulants, both general and topical. Thus in phagedenic ulcerations of the throat, occurring in the broken down constitutions of prostitutes, the internal administration of bark, and opium is demanded, and the sulphate of copper, or nitrate of silver required to arouse the part to a healthy action. In the cancrorum oris of children, no application is comparable to the sulphas cupri, and in such cases, tonics have often to be called in requisition, to sustain the faltering energies of life. The irritation and inflammation provoked by mechanical injury, differ, in some essential respects, from those produced by the bite of a poisonous reptile, and the irritation and inflammation consequent on the application of such a virus, are impressed with certain peculiarities, variant from those created by the variolus matter. The reader, it is hoped, will not consider these reflections irrelevant, when he considers the exclusiveness and partiality which mark the Broussaian doctrine of irritation. According to that scheme, all irritations, or inflammations, differ only in degree, and require the same method of treatment,

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prosecuted with a vigor correspondent to their greater or less degree of intensity. On my part it is contended that irritation, as well as inflammation, differs in nature, as in the instances adduced above, and agreeably to such essential speciality of distinction, a different, or greatly modified plan of medical procedure, is called for in different cases.

These remarks bear with particularity and emphasis on the subject of cholera. The irritation and inflammation witnessed in a majority of the attacks of cholera, are diverse in their character from those present in dysentery. What constitutes this notable disparity in the nature of the attacks of cholera and dysentery? Are not inflammation and organic lesion found in the mucous tissue, of the intestinal tube in patients, dying of both of these complaints? And the same amount of organic change is discovered in many fatal cases of fever, where no symptoms of either dysentery or cholera were present during life. How can the advocates of the exclusive French pathology, extricate their narrow scheme of explanation from such an embarrassment? Nor is this a mere theoretic perplexity in which they stand involved, but they carry out their principles, though so defective and meagre, into their modes of cure, and thus become more miserably entangled in the web of a false pathology. In defiance of the best ascertained truths of practical medicine they, standing as they do, on the fancied elevation of a new era in medical science of their own creation, spurn from their presence and brand with their scorn, the most efficient internal remedies. And this is done because such remedies are perturbating, as they assert, and calculated to irritate the already irritated inner membrane of the stomach and bowels.

The general results of the necroscopic examinations made by myself are in accordance with those given by the best writers on cholera. It is quite needless, considering the familiarity of the question, to detail the dissections made by me, for they would be but a repetition of the facts to be found in almost every work on the subject. Before leaving this part of the inquiry, it is important to have it borne in mind by the reader, that the organic lesions found in patients dying of cholera, bear an aspect similar to those revealed by dissection, in cases of death from fear. This, we consider demonstrative of the truth frequently uttered by some eminent physicians, that a correct conception of disease, cannot be attained by post mortem investigation, taken alone, and aside from the symptomatology of the case.

Treatment.—The prolonged consideration given above, of

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the views entertained by the writer, respecting the pathology of cholera, has, it is believed, prepared the unprejudiced reader for a candid reception of our plan of treatment. The elevated and commanding importance attached in modern times, to a judicious pathology is an auspicious omen, of the advancement of the art of healing in the road of philosophical inquiry. In the days of the humoral pathology, the fires of genius and the lights of cultivated talent, were lost in the wild and extravagant spirit of an unfounded speculation on the imaginary changes, which the blood underwent in disease, or which were incident to a restoration of health from sickness. But the rigid demonstrations of a just method of acquiring medical knowledge, has already rebuked this wild and extravagant spirit to the confines of truth; where still it lingers and occupies itself in occasional excursions into regions, which it is incapable of holding any longer in undisturbed occupancy. Now, although few physicians of any just pretensions to scientific medicine, permit their judgments to be ruled in any degree, in their treatment of diseases, by hypothetical probabilities or possibilities of the depravation of the vital fluid, yet there are too many minds in our profession who seem transported beyond the sober region of a sound inductive research, by the sweeping generalities of some all comprehending, all embracing conceptions of disease. Guided by the magical terms of debility, irritation and congestion, many there are, who deprived of these affective resources would be abandoned to bewildering fears that medicine had been shorn of its brightest rays, and that their feet must stumble along the darkness of the way unenlightened by the cheering radiance of their long fostered and favorite hypothesis. When employed, as some employ them, these terms tend to the supplantation of all enlarged conceptions of the true plan of treatment to be pursued in the abnormal deviations of action, to which the body may be subjected. To exemplify the truth of this proposition, let the reflecting reader, only advert to the blighting influence exerted on the treatment of cholera, by the fashionable prevalence of the doctrine of irritation in Paris. We behold the astounding anomaly in that intellectual city, in which some of the departments of human knowledge, are so assiduously and successfully cultivated, of physicians highly endowed with original gifts of intellect and the acquisitions of medical learning, suffering patients afflicted with cholera to die without any efficient interference of remedial applications. To show the reader that no exaggeration is committed by the state-

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ment, the following facts are given from the Medico-Chirurgical Review, for Jan. 1833.

"Some idea, says the Reviewer, may be formed of the mala-praxis of the French physicians, from the following report of the different plans of treatment of the cholera, in the various Parisian hospitals."

I shall extract but a part of the Reviewer's translations from the Journ. Complément, and refer the reader to page 185, of the London Journal.

"Hôp. St. Antoine.—M. Mailly. Leeches to the anus and epigastrium—venesection, anti-spasmodic and opiate drinks; stimulating frictions, infusion of peppermint, with acet. ammonia.

"Hôp. Salpetrière.—M. Piorry. General or local bleeding, hot aromatic infusion, Malaga wine, or light punch during the collapse, iced water, and when reaction ensues, leeches, poultices and gum drinks.

"Hôp. Pitie. Fresh lemonade or warm tea, peppermint and laudanum, opiate enemata. M. Andral employs ipecacuan emetics, excitants during the cold stage, local and general bleeding, during reaction, opium in small doses.

"M. Lisfranc. Tea, lemonade and punch, enemata, with sulphate of quinine; sinapisms and stimulating frictions. M. Velpeau. Sinapisms, opiates, quinine, enemata, to which are added laudanum and camphor.

"M. Bouillaud. Bleeding, leeches to abdomen, frequently repeated, iced lemonade. In the state of complete collapse, weak coffee as a drink, and drawing a heated iron along a flannel band, which has been well soaked in equal parts of liquor ammonia, and spir. tereb. and applied over the whole length of the spine.

"Val de Grace—M. Broussais. When there is profuse vomiting and purging, the patient should be given ice alone to swallow: when the state of cyanosis ceases, we ought to substitute drinks. No frictions should be employed. General bleeding, or what is better, numerous leeches, and afterwards hot poultices to the leech-bites, sinapisms, vapour baths, leeches and iced water to the head."

We will leave the reflecting reader to his own inferences, upon the perusal of the above representation of the Parisian methodus medendi in cholera, with two general remarks, arising immediately from the premises set forth in the quotation. First, that if the blood was at all poisoned in the choleric cases treated

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in the French hospitals, then many a poor leech must have met its death, during the prevalence of cholera in Paris. For it appears that leeches played a very distinguished part in the medical warfare, waged by the French faculty against this foe of life. Leeches, tea, lemonade, enemata, punch, iced water and weak coffee! what a formidable array of therapeutical agents.

The second remark, which is suggested in reading the above outline of Parisian practice, is the total omission of calomel from their list of curative means. Cholera, says these exclusives and ultras, is a disease of irritation, and calomel being, according to their prejudged view of the subject, a perturbating medicine, there can be no grounds upon which to establish even the faintest hopes of success from its employment. And thus, without any just consideration of the question, and with no fair trial of its efficacy is this most potent and excellent remedy banished from all participation in the work of rescuing afflicted humanity from that grave, which awaited so many of their patients. Assuming two very assailable positions, utterly incapable as they are of defence when tested by sound and enlightened experience, they obstinately persist in a course of inefficient remedial efforts, utterly incommensurate to the violence of the disease. The positions gratuitously taken by the French faculty are, first, that cholera is simply, and in all its stages a disease of sur-excitation, or excessive vehement activity of the vascular apparatus, and, second, that calomel is a perturbating or irritating medicine. The first of these errors has been combatted in the foregoing part of this essay; to a brief consideration of the second false averment, some reflections will now be offered. There is no truth in practical medicine more clearly made out than that, experience alone is the safe standard to which must be referred all our knowledge of the effects on the system of the various articles of the Materia Medica. The peculiar modes in which medicinal substances modify the actions of the vital powers in the different affections, for the cure of which they may be administered, can not be ascertained by any *a priori* conceptions, we may entertain of their properties, nor from any chemical analysis, or botanical affinities, or arbitrary classification of them. Accurate observation, guided and guarded by a sober spirit of inductive scrutiny, will alone assure us of the efficacy and inefficacy of our plans of treating disease. The deranged conditions of our

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structure, incident to the various maladies to which it is liable, are not to be bound by the exorcism of such a charm as that employed by the exclusive defenders of irritation. To aver, as the French physicians do, with but few exceptions, that calomel irritates the stomach and bowels is to substitute assertion for trial. Upon a most extended field of experience, trod so ably by English and American physicians, a totally opposite conception of the therapeutic agency of calomel has been gathered. No truth, in the whole wide orb of their practice in an endless variety of situations in the two hemispheres, has been more authoritatively announced by their general testimony, than that calomel, instead of being an irritant to the inflamed surface of the stomach and bowels, is a remedy that tranquillizes and subdues irritation. The success of the mercurial plan in dysentery, is one out of the many instances that could be adduced to prove the above statement. The external application of calomel to ulcerated surfaces is promotive of a healthy state of inflammation, and instead of inducing irritation will most effectively tend to its removal. But the curative effects of calomel when used in cases of intestinal derangements depend on a wider scope of remedial influence than that of a mere tropical application to an affected surface. The changes wrought by its primary, as well as secondary operation, are essentially subversive of the functional and structural morbid processes that may have obtained in choleric attacks. In pertinacious vomiting, occurring in cholera, in some cases, no remedy so readily subdues that irritability of the stomach, on which the protracted emesis depends, as calomel, or calomel and opium. And where the diarrhœal stage is present, one dose of ten, fifteen or twenty grains, with or without a small portion of opium, will frequently entirely remove all the derangement of the stomach and bowels. It is well known that in the diarrhœa of choleric seizures, no bilious secretion is noticeable in the stools. Now, there is no remedy at all comparable to calomel in renewing the secretory action of the liver. Frequently have I witnessed the tranquillizing agency of calomel on the bowels in such instances where there was no evacuation produced by its impression. Calomel judiciously administered in such cases, as well as in cholera infantum, will often so completely put an arrest to the irregular and inordinate movements of the intestinal canal, as to stay the emission of its contents for hours, unless other means are brought into requisition to urge their expulsion. The plain

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principle upon which this desirable issue is accomplished by the medicine, is that it puts a stop to that disordered state of the vessels, which is the proximate cause of the discharges seen in such attacks. The stereotype objection to the judicious use, which is often a free use of calomel, is, that it has been, and may be again much perverted and abused in its administration. Power is always, of whatever kind, and wherever deposited, amenable to the same objection. Whether it be power derived from knowledge, or power derived from wealth, or even power emanating from the possession of a fair reputation, or the power held by the medical attendant over the issues of life or death, still it, as the means of attaining any desirable end, is liable to perversion and abuse. Every species of power is, of course, restricted in its exercise by the limitation of all human means, for the accomplishment of the objects desired by the mind of man, in the varied aspirations to which it is subjected. How unphilosophical, nugatory and vain this argument, or rather prejudice, so lugubriously urged against so excellent an instrument of medical power, as calomel! It is good, because it is powerful, and we wield it with confidence, because in the hour of difficulty it fulfils our expectations of its power. In thus vindicating this efficient medicine, from the unfounded aspersions sometimes cast upon it by those, who under the power of a mental spell thrown upon them by the spectre of a delusive ultraism, have never dared to use it, I wish not to deprecate a just criticism upon the monstrous abuses to which its administration is sometimes subjected. It is not for those, however, who will not move out of the confined sphere of a routine practice, when they discover their plans utterly to fail, to sit in the scorner's seat, and rail in well set phrases against that practitioner who having been frustrated in all his ordinary measures of cure, nobly dares to be singular, and to attempt the relief of his patient by extraordinary expedients.

For the purpose of a distinct and explicit exhibition of the plan of treatment, which was generally pursued in this city, in cholera, a more circumstantial detail of the remedies employed is demanded. The prophylactic measures most appropriate in averting an attack of cholera were reducible to temperance in physical enjoyments, mental tranquillity, and firmness of moral courage. Under the head of temperance is to be included a moderate indulgence in the pleasures of gastronomy, and a total avoidance of fiery liquors, such as rum, brandy, whiskey and gin. It is not to be wondered at that the advocates of sedation

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should recommend such stimulating and incendiary articles of drink, but that any physician who espouses the doctrine of irritation to the extent of the French pathologists, should advise even their moderate potation, is indicative of an incongruity, not very honorable to our profession. Much and lasting evil has been inflicted on society by the recommendation given by some physicians, that ardent spirits are to be drank in order to keep off an attack of cholera. The habit thus commenced, or strengthened, of drinking spirituous liquors, assumes the guise of a medical prescription, which has carried many beyond the land marks of a temperate use, into the ruinous career of confirmed and hopeless drunkenness. This is no trivail affair, but connects itself with all the dearest interests of life, and rises into magnitude, in whatever attitude it may be contemplated. If such a suggestion did not too readily meet with a too easy acquiescence on the part of human appetite, the good sense of men would at once discover its inutility as well as certain destructive bearing. But to drink brandy, or rum, is a much more compendious and easily executed plan of prevention, than to exercise discretion and restraint in the way of living, and to cultivate a sound moral feeling with respect to the exigency of the times. In no case will the sudden creation of such a habit as that of drinking intoxicating fluids be of any avail in warding off attacks of an epidemic. The strong language of Dr. James Johnson is so apposite to the point that I will transcribe a few sentences from his work on Tropical Climates. "I shall not attempt to prove," says he, "that water is the simple and salutary beverage designed by nature for man, as well as other animals. In every nation, even the most refined and modern, a great majority appear by their practice at least, to entertain no such belief. They have, with no small ingenuity, contrived so to medicate the native fountain, that they are always either outstripping, or lagging behind the placid stream of life! The magic bowl which this moment

'Can pour remotest rapture on the sight,'

and raise its votaries into heroes and demigods, will, in a few hours sink them beneath the level of the brute creation!! I have already observed, that the grand secret or fundamental rule, for preserving health in hot countries, is, to *keep the body cool.* I have also, alluded to the strong sympathy that subsists between the skin and several internal organs, as the stomach, liver, and intestinal canal. On this principle, common sense alone would point out the propriety of avoiding heating and

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stimulating drinks, for the same reasons that we endeavor to guard against, the high temperature of the climate. But no,—a wretched, sensual theory has spread from the vulgar to many of the profession, who ought to know better." And again the distinguished writer says, "a common opinion prevails, even in the profession, that during the operation of wine or spirits on the human frame, we are better able to resist the agency of certain morbid causes, as contagion, marsh effluvium, cold, &c. But, let it be remembered, that it is only while the *excitement* lasts, that we can hope for any superior degree of immunity from the said noxious agents; after which we become doubly disposed towards their reception and operation." As cholera is an indigenous disease of the East Indies, and as the able author of Tropical Climates, for many years practised medicine there, the pointed weight of his testimony against the use of ardent spirits to prevent the disease is, by clear implication, seen and felt. It is indeed, as he designates it, "a wretched sensual theory," that prompts to the advice of their employment as a suitable prophylactic for cholera. The artificial and unnatural excitation created by such stimulating potations, inevitably dispose the system to a more susceptible reception and operation of the epidemic poison, generative of cholera. It is among the strange contradictions which meet in the intellectual character of some gentlemen of our profession, that whilst they proscribe and decry the judicious administration of large doses of calomel, for the cure of cholera, as being too perturbating, they prescribe brandy to keep it off. In Nashville, Ten. and Maysville and Lexington, of this state, French brandy was freely employed to keep off attacks of the epidemic. The melancholy result is written in letters of mourning on the tombs of the many victims of the disease, who died in those towns. In Louisville, scarcely a sober man perished by the malady, whilst in Lexington, especially, many who employed brandy as a preventive, were attacked and soon sunk into their graves. The difference of mortality between this town and Lexington, is to be attributed to the freer use of brandy in the latter city, as a prophylactic, in only a subordinate degree. Still it is demonstrable that the liberal employment of spirituous drinks upon the recommendation of some of their faculty, enhanced the fatality of the seizures, and multiplied the victims of the epidemic. Several eminent physicians in Lexington, stood opposed to the advice which directed the use of this incendiary and perturbating prophylactic, but amidst the terror and agitation of the scene, their counsel was

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like a voice of admonition, spoken in the deaf ear of a tumultuous multitude. A few there were who heeded that wise counsel, but they bore no comparison to the many who heard it not, or if they heard it, preferred the more acceptable suggestion of those who favoured the plan of stimulation. Any excitant calculated to derange the equipoise and adjustment of the beneficient relations of the economy, is injurious to the healthful functions of life, and consequently will contribute to awaken into activity the choleric predisposition. Ardent spirits are in their legitimate effects on the body, highly exciting and perturbating, and should be forever banished from the list of substances which are made subservient to the sustentation of our bodily health, and to our mental refreshment. Too strict an interdiction of alimentary substances was in some instances, which fell under my notice hurtful. A moderate indulgence in eating any articles of diet which agreed with the stomach, was the plainest and most rational rule of caution in that respect. The state of incubation, or predisposition, was to be guarded by all those precautionary measures, that are advised by the best authors, which have been found most conducive to the prevention of attacks of epidemic fever.

In the second stage, usually denoted by the presence of diarrhœa, a dose of calomel of ten, fifteen, or twenty grains, if administered in time, very generally restored the secretion of the liver, and produced a subsequent tranquil condition of the bowels. If there was emesis, I gave the calomel in smaller doses, and repeated it pretty often, till the stomach became quiet. In two cases of common cholera morbus, occurring in my practice six years ago, two grains of calomel, in a pill, were given every half hour, for twelve hours, till the vomiting was arrested. In both of which cases, there was no certain arrest put to the irritability of the stomach, till a slight salivation took place; and this did come on within fourteen hours of the attack, although the vomiting was constant. Such examples show, that the mercurial influence is exerted through the sympathetic irradiations of the stomach, and not by an absorption of the medicine. The lancet was employed with great benefit in this stage of the disease, whenever the pulse would admit of it. I have taken a quart of blood from choleric patients in this stage. Spasms, particularly distressing and severe, in the calves of the legs, and soles of the feet, were often supervenient symptoms upon the existence of diarrhœa for a day or two. In one patient, the spasmodic contraction of the muscles assumed a tetanic rigidity.

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A copious bleeding, with a mustard applied to the spine, and a larger dose of calomel, thirty grains, soon relieved this patient. Most generally the diarrhœa was without pain, or even uneasiness in the bowels. The rice water stools were passed in many cases, with no sensible sensations of pain. In one patient, a young lady, they came away involuntarily, whilst she was standing talking to her mother. She had been affected with looseness of the bowels for several days. Soon after this involuntary discharge, spasms came on, and I was sent for. Her pulse not admitting of bleeding, no blood was detracted, but a dose of calomel was immediately given, and a warm mush poultice, with powdered mustard thickly sprinkled over it, was applied to her abdomen. Before I saw her she had taken, by the advice of her mother, ten grains of calomel and one of opium. Bottles of hot water were applied to the feet and under the arms, which with the mustard soon created reaction, and I left her in two hours quite safe. No other evacuation from the bowels, since the involuntary one, was passed until the next day, and then not until pills of rhubarb and aloes were taken. The first two stools were very dark and offensive, but the subsequent one was tinged with a healthy hue. The combination of aloes and rhubarb in equal parts, next to calomel, was the best medicine that could be administered to act on the bowels. A more natural intestinal action was the result of this combination, than that induced by oil. The dose was two grains of aloes, two of rhubarb, and two of carbonate of potash, with half a drop of anise seed oil, every two hours, till one or two passages took place. When the rice water discharges existed, my reliance was on the calomel. I have given as many as four hundred grains in thirty-six hours, to a patient laboring under cholera, where occasional vomiting, and constant purging, with spasms, were present. Beyond this I have not gone, because I considered that there could be no utility in pushing the remedy any further. Several respectable physicians, however, did employ the remedy with a bolder hand. Stimulants, internally applied, I rarely ever administered. Where I was called to an habitual hard drinker, I then ordered the follwing pills

℞ Calomel ʒij.
Camphor ʒss.
Opium grs. iv.
M. ft. pill. 8.

One to be taken every one or two hours, according to the urgency of the symptoms. Sometimes red pepper was added

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to the pills, but I generally omitted it. Frictions to the surface, where it was cold, were useful, but the mustard poultices applied, as hot as the patient could bear them, to the abdomen, calves of the legs, and to the fore arms, were preferable. The bold use of the lancet, I regard as very important. The loss of blood seemed at once to modify or change the morbid action; or at least, partially suspend till the calomel terminated it. Copious venesection, often readily subverts the train of diseased associations going on in the system. Nor is this to be wondered at, when we reflect upon the predominant control, exerted by the heart, in all such constitutional disturbances, as fever, or cholera. Not having it in our power to obtain leeches, we, of course, did not employ them. The most appropriate drink was a thin coffee, as it is called, made of parched Indian corn meal, taken in small quantities. Ice was used with benefit to cool the ardent thirst, but was very liable to be abused in its use, by the patient demanding an excessive amount of it. In some cases, it produced bad effects, by augmenting the tendency to collapse, and in hindering the operation of the calomel on the secretory functions of the organs, involved in the circle of disordered action. In all cases, as a matter of prudential consideration, where a person applied for advice who labored under the diarrhœa, he was advised to go to bed till it was subdued, and to abstain from eating solid food. A little chicken water, or common table tea, was sufficient nourishment in all cases of the kind.

In the stage of collapse, where cyanosis, or blueness of surface, shrivelled skin of the fingers, absence of pulse, and other mortal phenomena were seen, nothing seemed to avail in arresting the impending catastrophe. External stimulation vigorously employed, with large doses of calomel, and injections of sugar of lead and laudanum, were the only probable means of recovery. On this stage, when fully formed, the shades of death hung in lowering aspect, and medicine in vain essayed to disperse them. But when but partially developed after a period, more or less extended, these symptoms of collapse gave way to consecutive fever. This fourth stage of the disease was characterized by a flushed countenance, warm skin, soft, open, and compressible pulse, some sensorial disturbance, indicated by hebetude, or coma, and a partial restoration of the secretions, which were suppressed in the collapsed stage. The urine was secreted in small quantities, and often the bile returned into the stools. In this stage a sub-acute inflammatory process was

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going on in the vital organs. The mucous coat of the intestinal tube, the kidneys, the liver, and brain were found affected with structural alteration, in some patients who died of the consecutive fever. With this rapid degenerating lesion of nutrition, there was connected a subdued activity of the heart clearly expressive of the fact that the nervous system had received a shock from which the constitution was incapable of restoring itself by its own unaided efforts. In all cases of deep constitutional shock, the morbid sympathies, upon reaction are apt to be called into play, and in their misdirected efforts to bring on inflammation in the vital organs. This is illustrated in bad burns, in cold continuously and intensely applied to the system where great caution does not direct the means of restoration to natural action; after protracted abstinence where food is incautiously given; in the drinking of cold water after great exhaustion; and in the mal-administration of tartar emetic. In all such examples the nervous system has been, not simply weakened in its energies, but that acted upon as to predispose the constitution to pursue an abnormal train or series of movements, destructive of the integrity of the organism. Call it by whatever term our medical neologists may choose to designate it, whether sedation or anormal, abnormal, congestive, or irritable action, still the effects will be revealed, in a very analogous circle of derangement in the organs. Thus the morbific agent which generates cholera, produces on the nervous system a constitutional impression, termed shock, which determines the vital forces to take on a particular series of catenated train of action, which will, unless checked in time, progress through a certain line of disordered movement, till finally it ends in an extinguishment of life. What the remedies are, which will put an arrest on this catenated train of morbid action, experience alone must inform us. No speculative consideration of debility, congestion, or irritation can guide our minds into the correct therapeutics of cholera. Of emetics, in cholera, I can say, but little, having never employed any but ipecacuanha, and that only when there were proofs of ingesta in the stomach which I wished to have ejected. In the fourth or last stage my reliance was almost exclusively on the mercurial impression, aided by the subordinate benefits to be derived from blisters to the abdomen and extremities. I have witnessed such signal exemplifications of the beneficient control of mercury over this stage, that no hypothetical objections could create in my mind any doubts of its superior usefulness. Mercurial inunctions should likewise be made auxiliary to our main

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and predominant indication, that of putting a stop to the disorganizing process, going on in the organs, by the establishment and continuation for several days, of the mercurial excitement. In this stage the patient should be allowed a little chicken, rice, or barley water very often. To establish the mercurial impression small doses of calomel should be administered, for if large doses are given the bowels are unnecessarily and injuriously acted upon.

ART. II. *Notice of M. Baudelocque's instrument, the Céphalotribe, for the reduction of the Head of the child in labors naturally impossible.* By L. C. McPHAIL, Lecturer on Obstetrics, Baltimore, Md.—followed by the report thereon, made to the Royal Academy of Sciences of Paris, by Messieurs DUMERIL and BOYER.

AMONG the many instruments that have been devised for the termination of laborious accouchment, none appears to be so well adapted to the purpose, as those lately invented by M. Baudelocque, (nephew) of Paris. This gentleman's mechanical ingenuity has enabled him to invent several instruments—the most useful of which, promises to be his *céphalotribe* or *brise tête.* I have known it applied with complete success in a case in which the crotchet could have been of no avail. The danger attending the use of cutting and pointed instruments, in the practice of midwifery, is too well established to need any further comments: the many deaths that have occurred from their use—the many fistulæ that have followed the injuries inflicted with them, upon the rectum and bladder—the many lacerations of the vagina, and tearings of the perinæum—and last, though not least, the great risk run by the accoucheur of mortally wounding himself, during his manipulations necessary to their application—should induce us to hail as a public benefactor, one whose fruitful genius has conceived and brought to perfection, a means of obviating all these. M. Baudelocque, therefore, is entitled to the highest praise for his invention of the céphalotribe, and should receive the most grateful considerations, especially, from those, to the study and investigations of whose affections he is exclusively devoted. Its use is sanctioned by experience; the danger apprehended from its application, although put forth by the high authority of Messieurs Boyer and Duméril,

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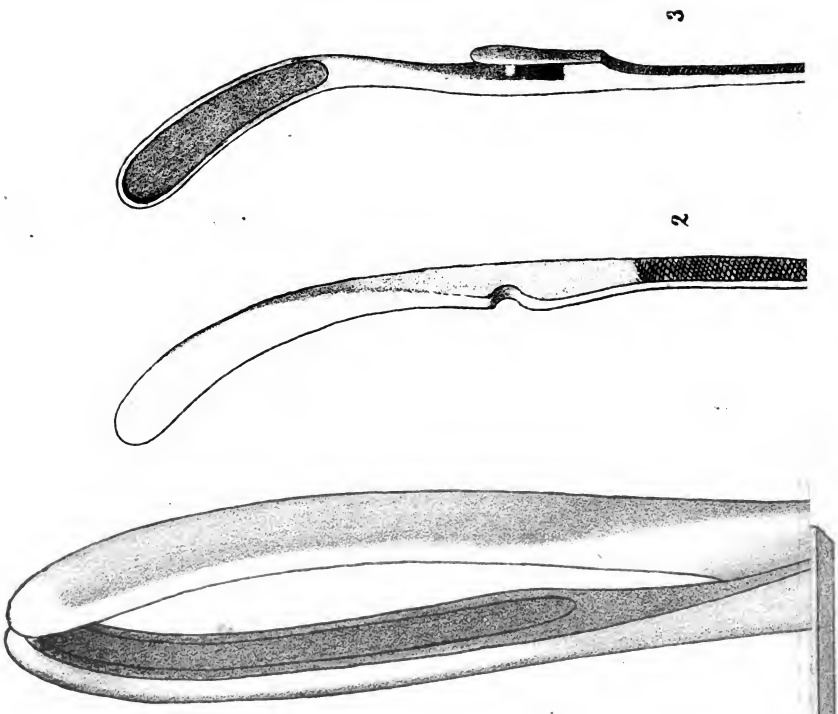

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is entirely imaginary. The instrument, as now perfected, can be readily applied, and will effect what no other is capable of; the diminishing of the base of the child's skull, and at the same time assuring the mother's safety. The céphalotribe presents other decided advantages; it enables us to deliver *instantly*—there is no necessity for piercing the head to let out the brain, no use for the *tire-tête*, in a word it is complete of itself.

M. Baudelocque devotes the first lesson of each of his courses, to the demonstration of the readiness with which the child's head may be reduced by his instrument.—I have had frequent opportunities of seeing this in his hall, Rue des Boucheries—Saint-Germain, Paris.

I subjoin a "*Report* made to the Royal Academy of Sciences of Paris, by Messieurs Boyer and Duméril, on a memoir on the crushing of the head of the child dead in the body of the mother—a new means of terminating laborious accouchment; presented by M. Baudelocque, (nephew.")

Royal Academy of Sciences, Paris, 19th October, 1829.

The Academy has charged us, M. Duméril and myself, to make it a report on a memoir which has been presented to it by M. Baudelocque, (nephew,) doctor in medicine and private professor of midwifery, and which has for title "*On the crushing of the head of the child dead in the body of the mother; a new means of terminating laborious accouchment.*"

The object which M. Baudelocque proposes in this memoir, is to make known an *instrument* that he has invented, for to break down the head of the child dead in the body of the mother, to reduce it in an instant to the smallest possible volume; but before giving the description of it he indicates the case in which it can be usefully employed.

When the basin is so badly conformed and so narrow that the delivery is absolutely impossible by the natural passages, either when they make use of the forceps or when they turn the child; if this is living they ought to have recourse to the cæsarean operation, or to the section of the symphisis pubis, according to the extent of the sacro-pubic diameter of the superior strait of the basin; but if the infant is dead, nothing can render excusable operations upon the body of the woman for the extraction of a corpse.

These principles are generally admitted by authors; but in practice their application often presents great difficulties, these are owing to many causes: on the one hand it is extremely difficult to appreciate exactly the extent of the sacro-pubic diameter

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of the superior strait of the basin below which delivery is physically impossible—on the other it is not less difficult to judge if the child be really dead or not, the signs that are regarded as proper to make known that it has ceased to live being nearly all uncertain. Hence, it results that sometimes they neglect to practice an operation that might save the life of the mother and that of the child; again, believing this last dead whilst it yet lives, they proceed to use instruments upon its body which deprive it of life, and which in the same time seriously compromit that of the mother.

But when one has at the same time, the certainty of the death of the child, and the absolute impossibility of the accouchment by the natural ways, nearly all authors counsel to open the head, evacuate its contents, and diminish it, so as to destroy the disproportion that may exist between its volume and the dimensions of the basin.

This operation which could it be performed without any risk to the organs of the woman should merit the preference over all others, if the diminution which it produces in the volume of the head overcomes the disproportion between this volume and the dimensions of the basin; but as it makes no change in the size of the base of the cranium, there results, that after having perforated and emptied the skull, one is obliged to break down its base with pointed crotchets or cutting pincers: *now we easily conceive how dangerous is the use of these instruments to the woman—whose womb, vagina and surrounding parts may be torn, and even for the operator who can readily wound his fingers with them.**

It is for to obviate such serious inconveniences, that M. Baudelocque has imagined an instrument, by the means of which we can in an instant crush the head of the child and reduce it to so small a volume that it can be afterwards readily removed from the most narrow basin.

* J. L. Baudelocque says in his memoir on the cæsarean operation inserted in the 5th vol. of the Recueil Périodique de la Société de Médecine de Paris: "How much ought not they to fear for the woman the use of the sharp pointed crotchet—conducted deeply, without guide, and as if by hazard! Can one be assured of implanting its point constantly upon the head of the fœtus, and when will it free itself, in turning from the parts of the mother which so closely embrace it!" We have constantly observed contusions and tearings of the womb, bladder, vagina, and rectum, and the neighboring parts at the post mortems of women, dead from the consequences of the use of the sharp pointed crotchet. Note of Baudelocque, (nephew.)

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This instrument is composed like the forceps of two branches, which cross and mutually rest upon each other nearly in the same manner as Smellie's forceps. The spoons have no opening, they are entire, three lines in thickness and sixteen in breadth, so as to be able to traverse with the greatest facility, a deformed pelvis, of which the superior strait is but *two* inches, or even twenty lines in its antero-posterior diameter; their length is such, that they can seize a head situated above the basin—their curvature corresponds to that of the parts of the woman. The handles measured from the middle of the instrument, or from its axis, are an inch longer than the spoons, five inches thick, and seven in breadth, and are screw-pierced at one of their extremities, for to receive a vice screw six inches and a half long, to which is attached a handle six inches in length.

This instrument is applied upon the head of the fœtus, in the same manner as the forceps—observing the same precautions. When it is placed, they bring the spoons together by turning the handle; the head is thus compressed with such a force, that the vault and base of the cranium, are effaced in an instant—the cerebral matter running out by the orbits, openings of the nose and the mouth. Nearly constantly, the scalp resists the action of the instrument, and the bones which constitute the base of the cranium, are forced out from their situations, and slide over one another, without forming any splinters. After the head has been thus crushed, they take out the screw, and withdraw the branches of the instrument one after the other, and then abandon the expulsion of the fœtus to the contractions of the womb.*

This instrument acts with a force very proper to fulfil the object of its inventor—to wit: the crushing of the head and its reduction to the smallest possible volume. But will it have all the advantages which M. Baudelocque promises for it? Will it be easy, and above all slightly dangerous, to carry into the womb above the superior strait of a badly conformed, and very narrow basin, an instrument weighing near seven pounds, and of two feet in length?† We think not, and our opinion will be

*M. Baudelocque has invented another instrument, by means of which, the body and every part of the child may be cut into *mince* portions, without running any risk of wounding the parts of the mother.—So that there can be now no case, which is beyond the resources of our art. McP.

†Since then I have diminished the weight of my instrument, which now weighs but five pounds and a half in the whole. They can see an instrument, as perfect as can be, at the museum of the faculty of medicine (Paris.)
Note of M. Baudelocque (n.)

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partaken of, without doubt, by the persons, who will call to mind, that, with ordinary forceps, one has frequently torn or perforated the uterus and vagina, in the circumstances wherein, even these, had been applied to the head, already down in the pelvic excavation. If such like disorders have been made with an instrument, of which the weight is but a pound and a half, and the length but eighteen to twenty inches, what will they not have to fear, when they make use of an instrument, longer and nearly four times as heavy—consequently a great deal more difficult to manage, and which ought to be carried to a much greater height? These inconveniences are serious without doubt; *but they are a great deal less so than those of the pointed crotchets with which they commonly serve themselves in the case for which M. Baudelocque proposes his instrument, which appears to us ought consequently to be preferred.*

M. Baudelocque has served himself, with his instrument, with success, in a case which we are going to report textually in his own words: "I have employed this instrument, on the ninth of February last, upon a woman in labor, of small stature, scrofulous constitution, affected with an inflammation of the womb and peritonæum *(métro-péritonite)* which I combatted by antiphlogistic treatment. After having taken the advice of two skillful accoucheurs, who proved the narrowness of the basin, and the impossibility of natural accouchment, and the serious state in which the woman was, I applied my instrument, and the volume of the head being considerably diminished—I extracted the fœtus which weighed six pounds—the perinæum was not torn. The same symptoms of inflammation of the womb, which manifested themselves during labor, having reappeared, I bled repeatedly. The fifth day the woman was without fever, and on the eighth she quitted the house of the midwife in which she had been delivered, and walked home on foot—where she was visited by Doctor Hervez de Chégoin, who found her convalescent."*

The invention of M. Baudelocque is a proof of his zeal for the perfectioning of an art, in the teaching and practice of which, his uncle, the celebrated Professor Baudelocque made so great a reputation, and this zeal appears to us worthy of praise.

*Since this time I have practised twice the chrushing of the head with the same success. Note of M. Baudelocque (n.)

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The great desire which M. Baudelocque has to make known, through the medical journals, his instrument, merits also in our estimation to be praised. (Signed) DUMERIL, BOYER, } *Reporters.*

The Academy adopts the conclusions of this report—Certified conformably—Perpetual secretary, counsellor of state, grand officer of the Legion of Honor, BARON CUVIER.

ART. III. *On the Identity of Variola and Vaccina.* By LEONARD C. MCPHAIL, M.D. lecturer on Midwifery, &c. Baltimore.

RECENT experiments made in Europe* tend to support the opinion long since entertained by the writer, that variola and vaccina are primitively the same; the latter somewhat modified from the former in passing through the animal economy of the ruminantia. This opinion has not rested upon hypothesis, being the fruit of ample experience, now confirmed by authentic testimony.

In producing any thing new one has to encounter many difficulties; the greatest of which to overcome are prejudice and preconceived opinion. On being called upon to investigate an opinion which is different from the received ones, we should bring to the work of examination, minds unbiassed by foregone impressions and unshackled from the authority of names. We should commence our investigations with the intention to seek for *truth*, and to expose *error:* prompted by a desire to extend our knowledge, and assist in rendering better the condition of the human family. But the readers of the journal are not called upon to give their attention to a mere opinion: a subject of great importance presents itself to their view. It calls for their attention not only by its novelty, but by the promise that it holds out of becoming eminently useful in a medical point of view, in placing in our hands a more sure means of preserving mankind from the destructive ravages of small pox.

Since the time of the illustrious Jenner, the world has been in possession of a shield against small pox in vaccination. It has been found, when perfect, a certain safeguard against that loathsome and destructive malady; but unfortunately, much ex-

*By Doctor Sonderland of Bremen—vide Medico-Chirurgical Review for January, 1834, page 209—Notice taken from *Journal der Pract. Heilkunde.*

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perience has shown, that the matter at present in use does not always possess a preventive quality—and consequently, but imperfectly protects. The fact is, the vaccine matter at present in use has in a measure lost its prophylactic virtue in consequence of its having been much altered from its true character by the influence of many circumstances.

Innoculation, or the production of small pox, in a mild form by the introduction of the variolous virus in an artificial manner was long known to the eastern nations. The first introduction of this practice into Europe is attributed to Lady Mary Wortley Montague. The practice of innoculation was found to diminish the hazard of death in a great measure. Yet, it was not without a great deal of danger one took the small pox under any circumstances. Hence, a means of prevention, free from danger, was much desired. It remained for Jenner to discover and make known to the world the prophylactic virtues of the matter known until now as *cow pox* or *vaccina*. He observed that milk maids were liable to a pustular affection, contracted from the cows, by the means of their hands coming in contact with sores of a peculiar character, usually located on the udder of these animals; and in consequence were protected from small pox. The idea struck him, that if he could introduce this matter into the human system, the body would be protected by it from small pox. The whole world is acquainted with his experiments and glorious success. Jenner for a long time believed that the vaccina was a virus engendered in the cow only. He was of this opinion until he found that the matter of *grease* in the horse was capable of producing in man a pustule altogether similar to that by the matter taken from the cow. This second discovery created a great deal of confusion in his mind; and I am not certain that he ever came to the conclusion as to which he considered the original source of the virus—the cow or the horse. It is a matter of great surprise, that so original a mind should never have conceived the idea, that the vaccina is the production of the variola—altered in some few of its characters by the difference of habitude which exists between man and kine. It is a matter of surprise that he should not have conceived that the vaccina is the matter of variola altered to a milder disease by passing through the bodies of ruminating animals—in a word, that vaccina is but a modification of variola.

The opinion that vaccina is nothing but modified variola, I do not claim as originating with me, although I never heard of the opinion before I instituted the experiments, which it is the ob-

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ject of this paper to make known more fully. I do however claim to be the first who has successfully proven the fact: if, however, another shall be found, who has obtained before me similar results, I will readily yield to such "hero of humanity" the palm that shall be justly due—contenting myself in knowing that my efforts, as well as his, have been directed towards ameliorating the condition of mankind—my ambition goes no farther.

I had early noticed the discrepancy which exists between the writings of Jenner and those of more recent authors upon the source from whence is derived the matter known as the vaccine.* In the year 1825, whilst yet a youth, I was struck, in reading the History of the Progress of Vaccination, with the apparent resemblance that exists between the matter of variola and that known as cow pox; and at the time conjectured that they might be one and the same affection, and determined to ascertain the fact, if possible, by direct experiment. In a very short time I obtained an opportunity by the small pox breaking out. From a man (a confluent case) who died in the 16th day of the disease, I obtained some variolous matter which I inserted into the udders of many cows herded in a pasture near the city. (Whetstone Point.) In several it took effect; and from them I took matter which proved to be the same exactly as vaccine,—when inserted into the human subject, running the same course, attended by the same phenomena, and producing the same effects, as those described by Jenner, Thomson, Bryce, Alibert and others, as being characteristic of the genuine cow-pock. These experiments were made known at the time to several of my friends, and their consideration brought before the Medical Society of Baltimore, in the spring of 1831. They are fully considered in my *thesis* on variola sustained before the Medical Faculty of the University of Maryland in 1832; and were the subject of a notice before the Royal Academy of Sciences of the Institute of France, where I presented them in the fall of the same year. Amongst the persons vaccinated by the matter artificially produced were two children of James Curley, city commissioner.

Some experiments have been made in this city with the *vaccine*

* Woodville's and Colman's experiments on the matter of *grease* (unsuccessful)—and only successful in the hands of others—when the small pox was general. Q. Are not certain sores capable of taking on a variolous character when exposed to the influence of small pox and imbibing its nature, can they not be made to propagate it by artificial means?

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matter, to procure it *fresh*, by passing it through the *cow*. I know not what good effects have resulted from this attempt at *filtration;* nor can I possibly conceive the object in view, in submitting kine-pock again to the action of the economy of the animal, from which it was originally derived. In the spring of 1832, I mentioned my experiments to a member of the board of health; and was very much surprised, to find in a few weeks afterwards, a notice in a daily print, conveying the intelligence, that attempts of the health physician to procure fresh vaccine matter had been completely successful. I at the time mentioned these circumstances to some friends, and had intended to have noticed them publicly, but my departure immediately afterwards for Europe, precluded the possibility. However, the experiments made under the direction of the board of health, are nugatory, having been with the *kine-pock* matter; whilst mine were the introduction of *small-pock* matter, with the result, *that it becomes changed into the vaccine by passing through the cow.*

Several have failed in their attempts to procure pure vaccine matter by the method devised.—How is this? Pure variolous matter is necessary to obtain it: and they have made use of the spurious (varioloid.) Some have attempted it on animals not obnoxious to its influence: again, others have innoculated *dry* cows, who will scarcely ever be affected—fresh milch ones being the proper objects of experiment. The French Academy failed, because the animals were not in a state to receive the variolous impression—whilst a farmer of Fontainbleau succeeded, because he used a young fresh milch cow.

How to procure the vaccine matter as prophylactic as it was in the days of Jenner.—Select young fresh milch cows, have matter truly variolous, taken from pustules at maturity, insert it by pricking it into the udder in several places—when matured gather it on glass.

Conclusions.—Vaccination when perfect is a safeguard from attacks of small-pox from the earliest infancy, to the remotest age.

Vaccination looses in part, its prophylactic qualities, by passing through bodies already affected with some cutaneous eruption.—Hence, only scabs from healthy persons should be used, for perpetuating good matter.

Inasmuch, as the vaccine is liable to become deteriorated by certain causes, we should frequently recur to its production, artificially.

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There is no necessity for keeping up expensive vaccine agencies, as the matter can be readily procured pure by innoculating the cow with small pox. The matter thus formed is more certain in its preventive qualities, than that now in ordinary use.

The use of pure vaccine matter thus produced, will cause all the ideas to be abandoned now entertained towards the recurrence to innoculation, which would add wings to the angel of desolation.

June 3, 1834.

ART IV. *Some remarks on the History of Syphilis, and observations on Mr. Carmichael's and Sir George Ballingall's views on its European Origin.* By ROBERT TOLIFREE, JR. M.D. of New York.

WERE our readers to judge from the facts offered, and the reasoning based on positive knowledge with their inferences, they must conclude that the supporters of the American origin of syphilis had not much real foundation for their conclusions. When Mr. Carmichael, in his work on the venereal, which may be styled a text book, and lately Sir George Ballingall in his published lectures, delivered in the University of Edinburgh, have promulgated the doctrine of its Indian rise, and since so much error is diffused on the subject from so weighty authority, our perusers will patiently bear with us while we vindicate our soil from the aspersions that ignorance and prejudice have unjustly heaped upon it. When reading the European accounts of the introduction of syphilis into that country, we have sometimes fancied that the writers of this embellishment for modern history, were only giving us a new version of the fable of Perseus, who flew to the habitations of the Gorgons, beyond the Western Ocean, as Hesiod asserts, cut off the head of Medusa, returned with rapid flight to the eastern continent, and from the blood that he dropt from his falchion, sprang many of the serpents and monsters, a theme of terror and wonder for ancient song. Mr. Carmichael in his monograph is the great champion for the importation of syphilis, and Professor Ballingall follows his guide, "non passibus equis." Sir George writes, page 458, "Alexander Benedictus, who wrote about the year 1497, was, I believe, *the first* who assigned to it an American origin. In

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the month of March, 1493, Columbus returned to Spain, after the discovery of a new world, and in the summer of that year the *venereal* disease made its appearance in various parts of Italy and Germany. It was, however, in the French army employed at the siege of Naples, that its ravages were most conspicuous; and Benedict, who was a physician in the Venetian army, in 1495, and who had therefore an opportunity of observing the first appearance of this disease, observes in his work De Omnibus Morbis, 'that a *new French* disease, or, at least, one that was unknown to former physicians, *owing to the pestiferous aspect of the stars*, had burst in upon them from the West.'" In this statement, Ballingall distinctly says, that the disease came from America, and in a few weeks extended over a dense population of country, containing many thousands of square miles. This I consider to be impossible, even if all the women were then courtesans, and the men were rakes, and their intercourse was as unrestrained as among the brute creation. Carmichael, first American edition, page 24, says, "on the whole it will *scarcely be disputed that syphilis* was *first brought* to *Europe* by the followers of Columbus; and that previous to *that event*, there existed, throughout the old continent, *venereal* disorders, both local and constitutional, which *strongly resembled* the *new imported disease*, and to the disgrace of our profession (with two or three splendid exceptions) have continued from that day to the present, more than three centuries, to be confounded with it by the general body of practitioners." We have given first the mighty quotation on which Ballingall relies to prove the importation of this disease, and we hear in the second place Mr. Carmichael say, that the force of his cobweb testimony can scarcely be disputed. Before passing to the subject more immediately under consideration, I will call the attention of the reader to the views of both of these authors, and see how well they coincide as champions in the same case. Mr. Carmichael says, the venereal existed in Europe *before* the discovery of a new world, by Columbus, but syphilis had not yet appeared, only a disease so similar that it could scarcely be distinguished from it. Dr. Ballingall on the other hand asserts that the *venereal* made its appearance on the old continent, *after* the great event mentioned above, and in this opinion I believe the Doctor stands solus. There is here either a want of precision in applying the term venereal, only to that form in which the Hunterian chancre occurs, or he has erred in giving his facts. If the Doctor has something unique in his doctrines, let

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us see that there be nothing outré in Mr. Carmichael. He supports, page 285, that "the variety of venereal appearances, and the *modification* and *change* which they are *perpetually undergoing*, together with the fact, that *these maladies are not exactly alike in any two countries: and the consequent frequent introduction of new symptoms by means* of *foreign infection* require that we should be always on the watch with a view to ascertain the *nature of the most prevailing* venereal complaints; for I have constantly observed that there is a *predominant infection for a season*, which, in general, *gives way to another.*" He quotes, page 97, his favorite Astruc, who writes that "from 1540 to 1550, *several of the symptoms* which had shown themselves from the first eruption of the distemper *seemed daily to abate* their violence." Nevertheless, he charges disgraceful ignorance on the general body of the practitioners, since the discovery of Columbus; for from that time they have confounded every form of the venereal and syphilis: yet at this period Mr. Carmichael pretends to place for himself and them, the exact line, its length and position, although each century has assisted to obliterate it, and the light of certainty has fast been fading. I do not enter into the dispute respecting the plurality or unity of venereal poisons, while I cannot refrain from mentioning that those who argue for the plurality of venereal poisons, have desired to cover as much ground as possible, and what they failed in fact, they have supplied by hypothesis, and have also made it a primary object to prove the introduction of syphilis by Columbus. This being settled to their apparent satisfaction, they judge that the proof of its being sui generis follows of course.* I will return, however, for the present, to Sir George, and take it for granted that he has adduced the most pertinent portion of Benedict's work, to substantiate his position, and I am compelled to own that it is on a par with many quotations I have seen advanced as incontrovertible.

Now the prima facia evidence in the Doctor's sentence, is against himself: Benedict explicitly says, the disease was a *new* one, and from the context we conclude that it had not long been in existence. But allow the Doctor that the word is used rela-

*I have read with no little interest the thesis of Prof. Geo. Bushe De Lue Venerea, Edinburgh, 1825, in which can be seen some cases against Mr. Carmichael's doctrine: and what gives more cogency to the Professor's facts, is the circumstance of their being observed in the hospital, to which Mr. C. was surgeon, and during Mr. C's attendance, and Prof. B. was then holding a place similar to our house surgeons, and was familiar with the practice, &c.

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tively, and means here that it was new, as it respects Europe, however, he will gain nothing by our concession. Benedict says, (and he is the first writer that uses this appellative) that it was a French disease. Is it not probable, if it was an American malady, that the author would have given to it the patronymic appellation, and not have bestowed on it a French name, when the Americans or Spaniards should have borne this mark of Cain. I will yield even this point to our opponents, who are too obstinate to give an inch, whether fairly or improperly acquired. In the next clause, Benedict tells us that syphilis *was owing to the pestiferous aspect of the stars.* Here we have its origin, while others among the early writers on the subject believed it arose from "an unwholesome disposition in the air," or a spontaneous corruption in the humors, contracted by an error in diet, or the abuse of the non-naturals. These quotations, Mr. Carmichael gives, page 18, of his work, American edition, and says they were the causes assigned "*when syphilis first appeared.*" If these were the causes given by the earliest authors, is it not presumption in us to claim more knowledge of an incident, of which they were the living witnesses. But my adversaries may still boast of their impregnable position, and ask what idea Benedict (a physician in an Italian army) conveys by the assertion that the syphilis "burst in upon them from the West." This part of the paragraph carries with it no weight, for every scholar versed in Roman and Italian History, and the reader of our learned historiographer Gibbon, can easily answer this query, by showing that the Italians applied the term west to both France and Spain, with Lusitania. Thus we have taken up in *ordine et singulatem*, the proof of the professor, and have endeavored to show its want of validity, and if the reader still thinks the Doctor's arguments are unanswerable, we must own that our mental hebetude, and not candid examination, has prevented us from discovering its force. We will now abandon for a time the Professor, and examine on the same point, the grounds of his great prototype, Mr. Carmichael. The situation of the latter is selected with more judgment, and fortified with more care. His fortress, we will labor to show is not impregnable, nor is his selection the best that could be made. He says, "it will scarcely be disputed that syphilis was first brought to Europe by the followers of Columbus." To show whether this assertion (and the reader must remember that none give more than their ipse dixit for their statements) is scarcely to be disputed, we will enter in limine on the facts. Columbus

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returned from his first voyage, March 14th, 1493, with a crew composed mostly of Spaniards, and within a few weeks the advocates of importation say, the formidable disease called syphilis, spread over Europe, and the appearance of this scourge being synchronous with the former great event, is unquestionable proof, that it came from America. I do not wish to have it understood, that I think the rise of syphilis in Europe was synchronous with the return of Columbus, however, we will waive for the present this consideraton, and allow for the sake of argument, that they were contemporary. To whom are we to look for any positive proof of its importation but to Columbus himself, who must have noticed such a malady in America, at his *first* landing, and he could not have transported so terrific a monster, without being known to him or his crew, and it would have been manifest during the voyage, and afterwards to the Spaniards at the place of the navigator's embarkation. When minor things have been transmitted to us, it is fair to conclude that a matter of so great importance would not have passed unobserved, or been left in silence. I have said above *first* landing; for it is as material a point in the controversy to know that the Europeans had not visited the natives, to give them the disease, as it is important to show that the natives first gave this malady to the Europeans. All this is overlooked by the defenders of its American birth place, and they hold that as a disease spread over Italy, Germany, &c. in the year of Columbus' first return, it is indubitable and unquestionable testimony in favor of its foreign origin. That a man enters a village on the night of a great conflagration, is not conclusive evidence taken by itself, that the person was the incendiary. But the more remote the conflagration beyond the place at which the traveller stopped, and the nearer the time of the fire to his arrival, and his non-appearance at the seat of destruction would all be adduced as circumstances in favor of the stranger's innocence. Yet testimony not admitted before legal tribunals is esteemed quite satisfactory before medical judges. To enter further into the merits of the question before us, and to weigh nicely all the evidence which Mr. Carmichael has presented, would contribute nothing to Mr. Carmichael's views, and as the selections offered bear most on the subject, I conclude that farther opposition to his conclusion, will be esteemed "nec operæ pretium." In this matter I do not offer as conclusive the ipse dixit of any man who has no more clue to govern him in his wanderings than others have. Let us leave

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our doctrines to be tested by facts, and let us be borne along by their irresistible current. Many before us have delighted to float their fragile barks on the artificial streams of hypothesis and fable. On the side of Mr. Carmichael, I know we have the assertion of the great historian Robertson, in his first edition of his History of America.* He presents us no authority for what he states, and only says what thousands had said before him, and what he believed to be true. Before his second edition he read the work of Dr. Antonio Sanchez Riberio, against the generally promulgated doctrine of the importation of syphilis, and of which author, Dr. Robertson says, "his opinion is supported with such plausible arguments as render it *a subject of inquiry* deserving the attention of learned physicians." This remark with the context satisfies me that the historian never made it a *subject of inquiry*, and he had candor to own that the physicians' remarks had a little shaken his early prejudices. This is not all, for Robertson himself does not write consistently; for he quotes the works of early American travellers, and authors, such as Charlevoix, Lafitau, De La Potherie, Piso, Hennekin, Rochefort, and others, whose accounts are at variance with the Indian origin of this disease. They say "the aborigines have little or no desire for venereal pleasures."—they "are exempt from many of the distempers which afflict polished nations;" "hardly any of them are deformed, or mutilated, or defective."† "All travellers have celebrated the uniform symmetry and perfection of their external figure." None of the maladies which are the immediate offspring of luxury, ever visited them; and they have no names in their languages by which to distinguish this numerous train of adventurous evils." "They are subject to consumptions, to pleurisies, asthmatic and paralytic disorders." Here is a positive and negative evidence from Robertson, and it may be inquired after all these facts, why did any one assert the American origin of syphilis? I will answer this question when you can tell me why Robertson, and hundreds of others falsely declared that the Americans were without beards, and considered this the great characteristic of the newly discovered race, and in Europe this circumstance was urged as a proof of their

*His History of America is an elegant specimen of composition, but containing the greatest inaccuracies.—Vide p. 5.

†Mr. Carmichael maintains in his first edition, that mercury is necessary to cure the disease acquired from the Americans, yet the Indians were ignorant of this mineral as a medicine.

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inferiority, and was esteemed an essential to the manly character, and without it, degradation may be fully justified. We now ask, what navigator or traveller mentions the existence of this disease among that portion of the aborigines discovered by them, and who had for the first time been visited by Europeans? If any can be found, it is a strong argument in favor of its rise on this side of the Atlantic, provided it can be shown that these savages did not receive the malady from the natives having held intercourse with the whites. This is the best evidence that can be adduced to show from whence it was brought, or whether it was to be attributed or not to the inhabitants of the old world. If no testimony of this sort can be cited by writers, who father this sin on the red men, I can produce something in defence of the rude native of the forest. The reader may be familiar with the voyages of Capt. Cook, who says that the venereal in no shape existed among the nations he discovered, and when given to the poor natives it raged with the greatest malignancy. It has been argued that the silence of the earliest voyagers, travellers, and writers, is no proof that it was not imported. I will allow it is not unquestionable evidence, still it is probable that when full in other particulars, they would not be tacit on this. Yet one fact like this afforded by Capt. Cook, weighs more than all the false reasoning on the other side of the question. I need not array other authorities, for I think that such men as Sir Joseph Banks, and Capt. Cook had little interest to swerve from a candid statement of what they saw. One cause has perpetuated the error under consideration, and that is, subsequent navigators seeing the venereal extending with great virulence among the aborigines, and hearing it to have been indigenous, at once sanctioned the fallacy. They do not know that the first assertors of the doctrine of the importation from the new world, had a strong interest to degrade the natives, and swell the catalogue of their iniquities. Not only were they said to be without beards, but owed to the Europeans a debt (syphilis) which they only could cancel by working in the mines, and submitting to their tyranny. Avarice leagued with falsehood to coin this base fable, and history has been deceived by its general reception. The records of the times do not furnish sufficient to be dogmatical, while I cannot but believe that the disease that raged in Spain a month before the first return of Columbus, was in fact the syphilis, and the same that is mentioned was brought over by the discoverer of our continent. Fracastorio, one of the earliest authors, and an extensive practitioner, expressly declares:

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"that syphilis appeared as synchronous in Europe, Asia, and Africa. This, if not controverted (and we know no proof to the contrary) must stand as positive evidence against the long supported notion. In no way can it be evaded from such high remote authority, unless they can maintain it was carried by the winds, and I doubt if any one could be found to resort to such reasoning. It would be natural for those pursuing this inquiry to search Spanish writers, for the elucidation of the matter. Oviedo, the first author to support its transatlantic origin, is so regardless of chronology, that his opinions are scarcely worthy of consideration. He says, that Cordova's fleet first carried the evil into Italy. This fleet arrived at the place of destination in Italy, in 1495, when syphilis had raged there for some time. He would make the rider outstrip the fleet courser that bears him, or rather he would land the cargo two years before the first appearance of the ship. It is useless to multiply remarks on the history of this disease, the promulgators of its Indian rise should deliver this motto to the believers of their opinions, "I hope he that looks upon me will take me without weighing."—*Falstaff.*

ART. V. *Case of Congenital Umbilical Hernia.* By LUKE ROBINSON, M.D. of Caroline County, Maryland.

ON the night of the 25th of January, I was called by Mr.—— to visit his wife, who he informed me had been in labor about twenty-four hours; he informed me also, that it was a twin case, that one of the children was born about five hours after the labor commenced, the other was still in utero, and the midwife was unable to account for the delay. As soon as I could I started with him; and when we arrived, we received the cheering information that the child was born:—we went into the house and found a pair of vigorous children, very little below the usual size. In conversation around the fireside, a vague expression dropped from one of the family, that the child last born, was injured some way, which induced me to make an examination: the result astonished me. I found an umbilical hernia of enormous size; containing a large proportion of the intestines. The tumor extended to the knees of the child. The convolutions of the intestines were easily seen through the transparent peritoneum, which was their only covering. On

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the superior part of the tumor, was to be seen the umbilical vein, and on the inferior part, the urachus and umbilical arteries; the arteries and vein united to form the chord at the apex of the tumor, at which place the ligature was applied. The aperture through which the viscera protruded, was about the size of a silver dollar, the skin terminated in an abrupt, smooth, even edge around the neck of the tumor, and did not appear to be at all on the stretch.

To reduce the hernia was the plain indication; and this, at first view, I did not think difficult to effect.—Accordingly I placed the child in the situation the best calculated to relax the abdominal muscles, and commenced the operation, and after several ineffectual efforts at reduction, I was compelled to desist, without having fulfilled the indication. Thinking that probably the presence of the meconium was an obstacle to reduction, I directed that a gentle purge should be given the child, a bag to be made in which to suspend the tumor, and that they should several times during the succeeding day, while the child was quiet, endeavor to replace the protruded viscera. With this I left, intending to visit the family again on the morning of the 27th.

On the morning of the 27th, I visited the family, and was very much surprised to find that my directions respecting the child, had been utterly disregarded, and that nothing was done. I found the herniary tumor without the least support, and much larger; from inattention and want of cleanliness, the peritoneal covering was much inflamed and excoriated. I now began to think that the case was hopeless; but not willing to give the child up to death without further efforts, I again attempted to reduce the tumor, and after employing all the tact that I could master, I was equally unsuccessful as in the first instance. I now placed the child in as comfortable a situation as the circumstances would permit, and with reluctance left it to die, which it did in a few days. If the hernia had had a covering from the common integuments as is commonly the case, much greater force could have been used to reduce it, but as it had only a single covering, which was the delicate peritoneum, this, I was fearful, might be ruptured in any very violent efforts at reduction.

The protrusion in this case, must have taken place several months before parturition. It seemed that the abdomen had only been developed sufficient to contain the part of the viscera within it, and that it had accommodated itself to that part.—Therefore, I think if the viscera could have been returned into

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the cavity of the abdomen, and retained there, that they would have been a source of insupportable irritation; and upon reflection it has occurred to me, that the only method of accomplishing the reduction with safety to the child, would have been to reduce a portion at a time, until the reduction of the whole could be effected; and by some means to retain each portion within the cover of the abdomen, until nature could have time to accommodate the cavity to the increase of its contents; and thus by the gradual increase of the capacity of the abdomen, occasioned by the distension caused by the reduced portion, it would become sufficiently large to contain the whole herniary tumor, without the inconvenience that would be experienced on the sudden reduction of the tumor, supposing that it could have been effected, which I believe was impossible.

The following has been suggested to my mind, as a method which in all probability, would have been effeetual in the gradual reduction of the tumor.—To take a Liverpool or China bowl smeared on the inside with a little olive oil, of a size smaller than sufficient to contain the tumor, invert this over the tumor, and make firm pressure immediately over the umbilicous, until the brim of the bowl should come in close contact with the integuments, and confine the bowl in that situation for several days; at the expiration of which time, a bowl of a smaller size, or a tea-cup may be substituted for the larger one, placed in the same situation, and confined in the same manner; and so at intervals of several days, still smaller cups should be employed, until at length, something in the form of a watch glass, would be sufficient to cover the tumor, and prevent the escape of the viscera through the aperture; and finally, a truss well adapted to the aperture would complete the cure.

ART. VI. *Case of Atresia of the Vagina, produced by improper Treatment.* By THOMAS JEFFERSON WHITE, M.D. of St. Louis—communicated to Professor Dunglison.

A CASE of this kind occurred to me last summer, during the prevalence of epidemic cholera, from the malpractice of an ignorant empyric of the Thomsonian fraternity.

The subject of it was a negro girl, robust and healthy, æt. 30, who had been attacked with spasmodic cholera, but had re-

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covered entirely, the system merely laboring under the slight febrile excitement, which usually succeeds those cases. I was sent for repeatedly, to obviate that excitement, but an extensive practice prevented me from visiting the patient. I however requested one of my students to call, and administer a refrigerant; in the mean time Mr. B. of steam memory, had prevailed on the owner to permit him to take her through a course of No. 6, &c., &c., telling him that the spasms would recur, unless that plan was adopted. The owner alarmed at the character of the epidemic, and the number of cases in his family, readily consented. Eleven emetics of lobelia were administered successively, and twelve injections of the infusion of red pepper, some or all of which, were thrown up the vagina instead of the rectum. The consequence can be readily imagined.—There were great prostration from the lobelia, and an active and extensive inflammation of the mucous coat of the vagina, with an entire sphacelus of that membrane from the distressing effects of the red pepper, together with a total adhesion of its parietes, with the exception of a very small space at the posterior portion of it, which could be barely reached by the point of the hidden finger.

To remedy this a perpendicular incision an inch and a half in width, was made, making the hidden finger of my left hand a director, and cut through the occluded portion of the vagina gradually and cautiously; taking care to avoid the bladder on the one hand, and the rectum on the other, until the knife reached the space between occluded portion of the vagina and mouth of the uterus, the incision being thus upwards of five inches in length. A large quantity of the catamenial fluid was discharged, to the great relief of the patient who had suffered for several days, the most excruciating pain I had ever witnessed.

A thick bougie was then introduced, previously smeared with ceratum simplex, and this was retained until the parts healed completely, except when occasionally removed for purposes of cleanliness. No inconvenience has resulted from the operation, and she has even menstruated freely, and is in perfect health.

I conceive it due to myself, my profession, my country, and humanity, to publish the history of the above case, imperfect as it is. It ought to stigmatize with infamy the ignorant pretender, who has thus abused the principles of the most godlike and useful of sciences.

St. Louis, May 20, 1834.

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ART. VII. *Observations on Ischuria Renalis; (Paruria Inops of Dr. Good,) with cases.* By M. H. DE LEON, M. D. of Columbia, South Carolina.

ISCHURIA renalis, as considered by authors, is a very rare form of disease, in which the functions of the kidneys are suspended, and the urine is retained in the blood. Symptoms, dull pain, sense of weight in the iliac regions, with great anxiety, nausea, vomiting, hiccough, cramps, general irritability, and restlessness; sometimes delirium, lethargy and coma; sometimes desire to void urine, though the catheter proves that *none* is in the bladder; the taste of the urine has been discerned in the mouth, and in many instances a strong urinous smell has been perceptible in the perspiration.

Sir Henry Halford's History of the Affection corroborates the above, in every important particular; in his experience the disease was uniformly fatal, terminating on the 4th or 5th day, by marks of oppression on the brain, revealing important pathological facts. Sir Henry Halford's cases occurred in fat, corpulent men, of fifty-five to sixty years of age. A urinous smell, he observes, was always remarkable in the perspiration before death. There are many extraordinary cases upon record, in which suppression of urine, a vicarious discharge, more or less resembling urine, has taken place, by sweating, vomiting, stool, &c. &c. and the patients, under these circumstances have survived a long time, and even ultimately recovered.

Dr. Yeats, in the 29th number of the Medical and Physical Journal, of London, gives many cases of this disease, which prove that the urine may be discharged from the skin. Muriate of ammonia appeared, says he, in one instance on the skin from its evaporation. The patient died, as soon as the secretion stopped. The history of a girl, who had this suppression for three months is also related, during which time, she had hysteric convulsions. Sauvages relates cases of total suppression of urine, and fœces, the skin, in all, supplied the defect, as soon as the secretion from the surface ceased, the patients died. A case of ischuria renalis is related by M. Dupont, physician to the 'Hospice de Gournay, which was caused by the drying up of an old ulcer. This was evidently the result of a metastasis to the urinary organs, the suppression was restored, by reproducing the discharge in the old ulcer. Dr. Parr relates a case in which he could discover no secretion of urine for six weeks. Haller gives a case of twenty-two weeks continuance. Dr. Richard-

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son relates the case of a lad, seventeen years old, who had never made water from his birth, nor had felt the least uneasiness on this account, being healthy, vigorous, and active; other remarkable cases are recorded.

The pathologists will pause ere he takes for granted, that so important a function could cease, without detriment to the economy, unless substituted by some vicarious outlet, this deviation from nature, would transfer the affection to the paruria erratica of Dr. Good, instead of the paruria inops of the same author. Dr. Teeling, in the Dublin transactions, relates a case produced by the metastasis of gout, which caused total suppression, and baffled all attempts to return the gouty paroxysm to the extremities. The case proved fatal on the fifteenth day. His patient died comatose. The post mortem examination in this case, shed no light upon the pathology of this remarkable disease. The narrator adds, that his death was evidently caused by a cessation of function in the kidneys.

It would be superfluous to multiply cases. The few selected from high authorities will go far to prove the uniformly fatal issue of this disease, when confirmed. The exception to this generally received opinion, as furnished by the successful termination of a case in my own practice, makes it imperatively my duty to give it to the medical public, somewhat at length.

On the 4th January, I was requested to visit Mrs. N. a lady of about fifty years of age, of strong and healthful constitution, having borne a healthy child, three years before the period last alluded to; she had never failed to be regular in her catamenial periods, up to the time of her last pregnancy, and always had been blessed with a bountiful share of health and spirits, insomuch, that her very youthful appearance might readily pass her for a lady of thirty-five, when almost fifty years old. After the birth of her last child, her catamenial periods became irregular, occurring at uncertain intervals, and continuing for many days over the usual number, gradually increasing to a profuse hemorrhage, to overcome which, my aid was frequently required. This deviation and irregularity, taking into consideration the age of the patient, I regarded as consequent to the final cessation of her menstrual flux, and I prescribed accordingly. At this period, my attendance upon her was only occasional, being summoned only when the flooding became threatening. Such was her dislike to confinement and medicine, that so soon as she was relieved, all treatment was at once abandoned, and her ordinary habits resumed, which never failed to aggravate injuriously the next ex-

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pected return of the hemorrhage, which had now become periodical at this crisis of her malady. I could never impress her with the necessity of resorting to medical treatment, in the intervals, between her periods, such was her unconquerable disinclination to restraint. Every practitioner in private practice, must have encountered similar difficulties among the better classes of patients.

One year from the period of the first profuse hemorrhage, the health of this lady commenced rapidly to decline; her temper became fretful: and her fears were greatly excited, she kept her bed, and I attended her regularly for the following symptoms. Since her last period, the drain of flood has been incessant, for ten or twelve days, and the hemorrhage often, so immediately alarming, with frequent syncope, that I was in every instance, constrained to plug up the vagina, with a tampon of fine sponge; previously to attempting any internal or external remedies for her relief. By this aid, I placed my patient in a state of safety, giving time to rally her drooping spirits, being greatly terrified on such occasions, under her impression that "she would bleed to death." So long as the tampon remained, and no longer, could the hemorrhage be controlled. Every resource of the art was exhausted in vain, and the whole class of astringents in the materia medica, from minimum to maximum doses, were administered by the mouth, and by injection, with diligence and care; they all proved powerless in any form, or under any circumstances. In this case I prescribed the sugar of lead and opium, on the most extensive scale, both by the stomach and bowels. I had more partiality and confidence in this remedy than in any other, to answer the same indication, it never having failed with me before in large doses, combined with opium or capsicum, according to the circumstances of the case, here it proved entirely inert, and useless. Foiled on every side, and the friction occasioned by the constant use of the tampon, beginning to excoriate and produce uneasiness; I urged upon my patient, (who was a very sensible woman) the necessity of a manual examination, which she readily assented to. The manual examination of the parts revealed extensive disease, embracing the greater part of the internal organs of generation. We will here pass over the diseased state of the uterus, and its appendages, as being irrelevant to the object of this paper, and dilate upon the more interesting and prominent features of the cause which induced it.

After success had attended our efforts in overcoming the hemorrhage, my patient daily improved, under the free use of light and nourishing materials, insomuch, that after a very short

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interval, she was enabled to attend to her domestic duties, with only an occasional interruption, from the effects of a then chronic disease. From this period, my visits were only incidental:—on one of these occasions my patient said to me:—"Doctor, 'tis very strange that I have passed no water for many days, nor have I felt the least inclination or inconvenience from not doing so. From these causes I thought it unnecessary to mention the circumstance expecting it daily to return." To this I responded by asking all the necessary questions, going to shew retention of urine; not dreaming of suppression at this period. After some reflection, and reverting back to the time of the profuse discharge of blood, causing incalculable waste to the general mass of fluids, I readily referred this diminished secretion of the kidneys to this reasonable conjecture, based upon the immutable laws of the organization.

I renewed my interrogatories upon my evening visit, as my prescription had not availed; the replies of my patient were so vague and unsatisfactory, as to the point at issue, that I urged upon her the propriety of a manual examination, to clear up all doubts and uncertainties, as to the actual state of the bladder. Being in the entire confidence of the lady and her family, my wishes were forthwith complied with. My examination resulted in the developement of the real nature of the affection, which I am free to confess caused me much painful anxiety, in consequence of the intense interest I felt for the patient, and her family. At this critical juncture, the lady was much debilitated from her previous disease; but her health, strength, and appearance, were all daily improving; the flooding had ceased for some time, and a slight mucous discharge, had supervened upon the final cessation of her catamenia. The uterus was somewhat enlarged, but free from pain, or other inconvenience. The bladder was flaccid; no tension above the pubis, nor other ailment in that region; the only complaint uttered, was a sensation of weariness in the loins, immediately in the neighborhood of the kidneys. I cautiously introduced the catheter, and if I was before astonished, I was now confounded, upon withdrawing the instrument not one drop of fluid followed it, which was conclusive evidence, that the bladder was empty; how long it had been so, I could not anticipate, or could my patient determine, having in the first instance, regarded the matter as of little moment. Her anxiety was now painfully awakened, owing to her supersensitiveness, conjoined with great intelligence; this constrained me to treat the affair somewhat lightly to her, to calm her fears; but

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propriety and candor demanded, that her family should be apprised of her danger; which from my reading, and preconceived notions of the disease, I deemed to be at its acme; having treated one case before, which terminated unfavorably, despite of youth, constitution, and the advantage of the best regulated treatment, directed by the skill, and experience of the gentleman associated with me, in the management of that case, (which I will detail in my progress.) I had but little foundation to build hope upon, in the case then under my observation and treatment.

Day followed day, under the catalogue of remedies suggested by the best authorities, giving to each a fair trial before they were abandoned. No melioration followed their exhibition; the symptoms remained in statu quo; I occasionally introduced the catheter, to certify me fully, that the bladder contained no fluid, and that the full action of the kidneys was not yet restored. The internal and external medication, was modified in every possible manner, and pursued with great zeal and perseverance, with no better success. The third week of my attendance, for total suppression was now ended; and not finding any plan of treatment I could propose, likely to avail, I urged upon the lady and her friends, the propriety of allowing me a consultation. The lady herself, from the little pain, or inconvenience experienced, was scarcely sensible of her actual danger; but her family were in full possession of all my fears, and my doubts, as to the favorable issue of the case.

The consultation was denied me, on the ground of inflicting an unnecessary pang upon her feelings, by causing her great alarm, as to her actual danger, with which she was unacquainted. The additional responsibility, which now rested upon me, painfully increased my anxiety; I therefore by a little address, succeeded in obtaining my patient's permission, to exhibit her case to a medical friend of high standing in his profession; foregoing the formality of a consultation; who would look in with me *en passant;* stating to her, that the novelty of the case, made it highly interesting to a professional man.

This gentleman visited with me, three or four times during the same week. At his last visit, I urged him, with the consent of the patient, to introduce the catheter, which he complied with; not a single drop of fluid followed its passage outward. After much reflection and consultation, we fully agreed, that the case would prove fatal very soon, although no untoward symptom was at this moment present, save the entire cessation

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of secretion by the kidneys. Her brain was perfectly calm; insomuch, that being a widow, with a handsome estate, and grown up children, it became necessary that she should make her will; which she executed with considerable composure, so far as could be discerned. The only change observable as to the effects of the disease upon the brain, was now, a restless and impatient manner, with constant inclination to have her mind employed, and her body in motion. I continued my attendance daily, diligently applying every aid within my reach, till the commencement of the *fifth* week, when, on one of my morning visits, the patient informed me, that during the night, she felt more than an ordinary uneasiness in the back, and about the bladder, with frequent inclination to urinate, which caused her to make the effort, which ultimately proved completely successful! The discharge was exhibited to me, which had a strong urinous smell, and possessed all the chemical properties of urine. The quantity evacuated did not exceed three ounces. The stimulating frictions to the spine, were continued, with internal medication, and in twenty-four hours more, the secretion was fully restored in quality and quantity, and was not again interrupted; the bladder performing its office healthfully, and every function connected with the urinary apparatus, duly exercising its share in the economy, as formerly.

The case detailed is remarkable in a pathological point of view; and its successful termination, after so long a period of entire and complete suppression, from organs which are supposed to eliminate from the blood, to be discharged from the system as unfit for its healthful purposes, a secretion which when returned to the circulating mass, has never failed to prove hurtful to animal life. This result has always obtained in the fatal cases detailed by Sir Henry Halford, and other European writers, upon the disease in question, going to prove conclusively its particular influence upon the brain; their patients in almost every instance dying comatose apoplectic, &c.

It may be expected of me, to detail the practice pursued in the case. To sum it up in a few words, I would remark, that *every remedy* suggested by writers on the disease had a full trial before they were laid aside. I am not therefore prepared to admit the value of one over another. Cupping over the spine, repeatedly instituted, and followed up by the most powerful rubefaciants, by friction, claimed my greatest regard.

I will in this place remark, that in the enjoyment of a full practice for many years, this is the second case I have ever seen.

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The first case which came under my observation, was that of a Mr. T——, of Columbia, South Carolina, aged about 38 years; of thin, spare habit, but of sound and healthful constitution. I was requested to visit this gentleman, and found him suffering under a severe attack of cholera morbus. After his symptoms were relieved, and when his approach to convalescence was rapid, he called my attention to considerable uneasiness about his loins and bladder, and remarked, that he found it difficult to pass his water, and had passed very little for several days. I paid little or no regard to this statement, as the excessive discharges from the bowels, would satisfactorily account for the scantiness of the urinary secretion. I ordered him a warm bath. On my next visit he complained of considerable nausea, with intense pain in the lumbar region, passing through the kidneys to the bladder; cramps with other well marked symptoms of a nephritic paroxysm, and a total inability to pass his water. I bled him freely, and ordered him to be cupped, to be followed by a warm bath, and afterwards an emollient injection. On my next visit his symptoms were greatly mitigated, but still an inability to urinate, with considerable uneasiness in the bladder. I bled him again freely, and attempted to pass the catheter after a second warm bath. I could not introduce the catheter into the bladder, it was obstructed by a permanent stricture in the urethra, of old standing. I desisted for that time, as he complained of the instrument causing him much pain. I continued my treatment, predicated upon the belief that he labored under retention of urine, consequent upon the intense inflammation of the kidnies which had preceded it. Under the treatment, all pain and uneasiness ceased. This occupied several days, and yet no urine had been discharged in the interim, which circumstance caused me to examine his abdomen very minutely, together with the pubic region. The parts exhibited no tension or pain whatever on being firmly pressed, but on the contrary, appeared more flaccid than ordinary. I again attempted to pass the catheter, which was introduced without difficulty, owing to extreme relaxation. My surprise can be easily conceived, when on withdrawing the catheter not a drop of fluid followed its passage outward. All ambiguity was now at an end as to the nature of the affection, which I had before considered and treated as a case of retention of urine, never having formed the idea of suppression of the urinary secretion. The case not becoming changed or benefitted by any plan of treatment which I could devise for its relief, I was joined in consultation by Drs. Harris

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and Trezevant, of this place. At this period the patient did not complain of any pain whatever, or any other uneasiness of body. His mind was supersensitive to a great degree, as to the unpleasantness of his situation. Save this, the only difficulty to be overcome, was his inability to pass water when he sometimes felt an inclination to do so.

The catheter was again introduced by Dr. Trezevant in our presence, but no fluid followed its exit from the bladder; the suppression had been now complete for eight or nine days, commencing with the inflammatory symptoms of the kidneys before detailed.

This case terminated fatally at the end of the third week, baffling every plan of treatment, modified in every possible way, which could be instituted for its relief: the kidnies never again resumed their office.

As this case was highly interesting, leave was obtained to examine the body, which was done twelve hours after death, it being very warm weather.

The post mortem examination shed as little light on the pathology of this affection, as if we had not made it. The dissection was carefully conducted with the view of learning more of this remarkable disease, than we had acquired. The viscera of the abdomen were found in a sound and healthful state, except the right kidney, which was considerably enlarged, aud bore marks of recent inflammation. The bladder was much contracted, insomuch that we had to raise it up to recognize it to be that viscus. These were the only organs in a pathological state, as far as we could discover. Some difference of opinion existed at the time of the dissection, as to the disease of the kidneys; one gentleman did not conceive it to be a recent disease of that organ, but I was constrained to a different belief, from the symptoms which had preceded the suppression of urine, which had required the most active antiphlogistic means to overcome. This discrepancy however, is a matter of but little moment in the general features of the case. This patient suffered no pain from the time of the reduction of the active inflammation, up to the time of his death. His appetite was good and his strength equal at all times to rising from his bed and pacing his chamber, which he did constantly. The only indication of disease which could be discovered, was considerable cerebral irritation, shewn by the state of his pulse, the appearance of his countenance, with an altered state of his temper, which was now highly irritable and peevish. When in bed he was in constant

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motion: when up his manner was hurried and restless, with an uncontrollable desire to be constantly out of his bed and walking his chamber, which he would do, being at this crisis impatient of advice or control. His natural disposition became so changed that his wife could not influence him in any degree; her power over him, which had always been marked, was now at an end, going to show more clearly the state of his brain. I could at no time discover the least approach to delirium or incoherency in his conversation.

This patient died apoplectic, with little warning to his friends of his approaching dissolution; having been out of bed and performing upon his flute, within three or four hours of his death.

As to the pathology of this anomalous affection, we have yet much to learn, the more so, as dissection has shed so little light, from which we could create data to theorise and improve our knowledge. We are still doomed to the meanderings of hypothesis and doubt, in the absence of the pathological state of any of the vital organs, which as yet dissections have not revealed, either in this country or in Europe, so far as my observation has reached.

Sir Henry Halford has written more philosophically upon this affection than other European writers; this has no doubt arisen from his having had the opportunity of meeting with a greater number of cases, than other practitioners; in consequence of which, he has acquired a better understanding of its various phenomena, which is still imperfect. In this country the disease under consideration is of very rare occurrence; hence we are compelled to make larger drafts upon the knowledge of our European brothers; and like them, to consider it as generally fatal when unequivocally established.

Nature may sometimes substitute some vicarious outlet for the urine, and thereby suspend the fatal issue for a time, but in no instance within my reading or observation has the cure been effected, by this means. The hint furnished by nature may hereafter lead to a better understanding of the disease, which being improved may tend to more valuable and successful therapeutics. The first case faithfully detailed at length, will go far to settle a mooted point, as recovery was fully established in as confirmed a case, bearing every characteristic stamp of the affection, as will ever be met with in practice. The second case as well marked by every symptom of the disease, proved fatal; in accordance with generally received opinion. As to the transfer of this affection to the brain, by the absorption of urea.

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back into the blood, by metastasis or any other unknown cause, I am neither prepared to admit or to deny, neither would it be profitable, or improve our knowledge, to examine or discuss these several doctrines; the deficiency of our land marks in the absence of information gained by dissection, must continue to surround them with inexplicable difficulties. I can however bear ample testimony to the facts, that in the two cases treated by me, but more particularly in the fatal case, the brain seemed to sustain the whole weight of the disease. The sensorium was not influenced by that exalted state of irritation amounting to delirium, but in both instances, the patients labored under more irritability of temper and impatience, than was common to their dispositions. They were always impatient of control, and exhibited a constant desire to be in motion.

In the fatal case I cannot forbear to mention a peculiar state of the brain which attended the propensity of the individual for music was insatiable, insomuch that he would be indulged in playing upon his flute, when it was totally inadmissible that he should do so; nay, he would not be restrained in this indulgence of his propensity by any means, short of actual force; remonstrance was vain, the persuasion of his wife and friends availed as little, in opposing a barrier to his inclination in this particular. He continued to indulge this passion for music throughout, up to the day of his dissolution, and I was informed by his attendants that he played a lively air on his flute, not more than two hours before he terminated his existence.

Columbia, S. C. June 1, 1834.

ART. VII. *Reflections on the Pathology and Treatment of Anæmia or Oligæmia.* By E. GEDDINGS, M.D. Professor of Anatomy and Physiology in the University of Maryland.

WE propose in the following remarks, to direct attention to a condition of the organs, and of the blood which is circulated through them, which, from the blanched character of the tissues, and the deficiency of the circulating fluids by which it is attended, has been denominated anæmia, oligæmia, bloodlessness, &c. It is generally characterised by a marked deficiency of blood, which is also much more serous than natural, and presents at the same time a remarkable diminution of red globules and

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coloring matter;—by a blanched or waxen appearance of the countenance, and of the skin generally, great impairment of the constitutional energies, exsanguined condition of the tissues, watery effusions into the cellular tissue and into the cavities of the body, and in many cases with a frequent, fretful and *shattered* pulse. It is not intended of course to include that state of anæmia which proceeds from excessive losses of blood, or from an inordinate draining away of the fluids by redundant secretions and exhalations, as in cholera, diabetes, colliquative diarrhœa, chlorosis, marasmus, hectic, &c., although so far as regards general effects, there is in many respects a strong analogy.

Sec. I. *History of the disease.*—Anæmia has been seldom observed as a primitive and independent affection, yet as an attendant on other diseases it is of frequent occurrence. In the class cachexies of the nosologists especially, it forms a conspicuous feature, nor is it at all uncommon in many other maladies which are attended with an enfeebled or perverted state of the complex acts of nutrition.

Under the one or the other of these characters, it has been described by a number of authors, some of whom have merely noticed it incidentally, while others have treated it *ex-professo* and in detail. Amongst these, may be enumerated Reiselius,[1] Schwenke,[2] Becker,[3] Alberti,[4] L. C. Hoffman, Jansen,[5] Freytag,[6] Möegling,[7] Isenflamm,[8] De Haen,[9] Lieutaud,[10] Hallé,[11] Geoffroy and Nysten,[12] Chomel,[13] Comb,[14] Andral,[15] Roche,[16]

[1] Ephemreid de Nat. Curios. Ann. vii. dec. ii. Obs. 14.

[2] Rari Casus explicatio Anatomico-Medica in Haller disput. ad. Morb. Hist. et Curat, tom vii. p. 469. Lauss. 1760.

[3] Dissert. Resol. Casus Pract. Anæmiæ. Lugd. Bat. 1663.

[4] Dissert. de Anæmia. Hallé, 1732.

[5] De Morb. ex-defectu Liquidi. &c. Lugd. Bat. 1748.

[6] Dissert. de Anæmia. Götting. 1782.

[7] Anæmia theoret. et pract. perlust. Tubing. 1756.

[8] Dissert. de Anæmia vera Erlang. 1764. idem de Anæmia spuria, 1766.

[9] Ratio. Medendi tome vi. Cap. vi. p. 101—iii. Viennæ, 1761.

[10] Precis de la Medicine Pratique tome i. p. 132. Paris, 1769.

[11] Journal de Med. de Chir. de Corvisart, &c. An. iii. tome ix. p. 3.

[12] Dictionnaire des Sciences Medicales Art. Anæmie.

[13] Dict. de. Med. par Adelon, Andral, Beclard, &c. Art. Anæmie.

[14] Transactions of the Medico-Chirurg. Society of Edinburgh, i. 194.

[15] Clinique Medicale, &c. tome iii. p. 558. Precis d'Anatomie Pathologique, tome i. p. 80, 1829.

[16] Dict. de Med. et de Chirurg. Pratique, Art. Anæmie.

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Berndt,[17] Lobstein,[18] S. Jackson,[19] Marshall Hall, [20] Copland,[21] &c. &c. But notwithstanding all the attention the subject has received, much obscurity still exists in relation to its pathology; and as it depends upon such a diversity of conditions, many of them apparently of very opposite characters, we cannot hope to understand all its protean forms.

The case reported by Reiselius, was that of an individual who died of a continued fever, after having taken a large dose of jalap. *In hæc corpore nec duæ parvæ ventosæ sanguinis,— nec grumi alicubi inventi sunt* (*Ephem. de n. c. Ann. vii. dec.* 2.) The example described by Schwenke, presents a character of much more interest, as the particulars of the case are more fully detailed. The individual was a General officer, aged 61. He was thrown from a horse against a tree with such violence, that it was supposed he would not recover from the injury. After some time the immediate effects of the violence disappeared, but he was occasionally subject to attacks in which he fell to the ground, and was affected with slight spasms and contortions of the face, which were attributed by his friends to vertigo, but which were not much regarded by himself. He led a sedentary life, and indulged freely in the pleasures of the table, which in the course of time so much exasperated the cerebral affection, that he experienced repeated attacks of hemiplegia, which varied much in degree, being sometimes confined to the tongue, with numbness of the extremities, but occasionally more intense, and accompanied with violent continued fever. These symptoms were for sometime mitigated by purgative and other medicines, but still continued to progress, until the individual, exhausted by fever and irritation, fell into a state of stupor, from which it was difficult to rouse him; the powers of vision were destroyed, and his intellect was so obtuse that it was necessary to interrogate him repeatedly, before a response could be obtained. Innervation and circulation finally failed, and death released him from his sufferings.

On dissection, the various organs of the thorax and abdomen, although they furnished some slight evidences of disease, exhibited no lesion of sufficient intensity to explain the symptoms

[17] Encyclopædisches Wörterbuch. band ii. Art. Anæmia, Berlin, 1828.

[18] Traité d'Anatomie Pathologique, tome i. ii. Paris.

[19] Observations on Hæmatosis with cases, &c., American Journal of the Med. Sciences, vi. p. 114, Philad. 1830.

[20] Cyclopædia of Pract. Med. Art. Anæmia, London, 1832.

[21] Dictionary of Practical Medicine, &c. Art. Blood, London, 1833.

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manifested during life. But on opening the cavity of the cranium, a large quantity of bloody serum rushed out at the opening. There was also a considerable quantity of serous fluid effused between the arachnoid membrane and the brain, and the dura and pia mater both exhibited numerous traces of disease. But what is most remarkable the *cerebrum durissimum instar tendinis, exsuccum, tractabile totum, compressum, parvum, calvarium neutiquam replens. Desectionem totam fuisse siccam—neque exvasis, abdominalibus neque aliis quæ in dissolutione et apertura separata guttula sanguinis erupit, omnia vasa flaccida, exsucca, collapsaque fuere, exceptis paucis guttulis sanguinis, quæ cum sero mixtæ ruborem dedere in abscissione cranii, hæ exdiploe distillatæ. Haller Disput. vii. p.* 469–483.

Morgagni has also reported several cases; one of disease of the uterus; one of gout and calculi of the kidnies; one of enlargement of the spleen, attended with frequent attacks of hæmatemesis, and one of suppression of the menses, complicated with various organic lesions, in which the heart and arteries were found after death almost devoid of blood. In one case there was a general blanching of all the tissues and organs except the spleen; most of them were attended with watery effusions, and in one, the muscles were so much atrophied, that their fleshy character could scarcely be recognised.*

Lieutaud, however, seems to have observed this condition more attentively, since he did not merely regard it as an attendant on other diseases, but as an independent affection, which he has described under the appellation of *épuisement des vaisseaux sanguins.*† He has furnished a brief, but most accurate picture of the disease in that form in which it presents itself unconnected with any important or very appreciable organic lesion, and remarks, that in some cases he has seen the cavities of the cranium, thorax and abdomen, as dry when opened as though they had been composed of wax. De Haen, has also noticed the disease, and has reported two very interesting cases strongly illustrative of its character. The first, was a female, aged 65, who received a wound of the brachial artery in the operation of venesection, in consequence of which an operation became necessary to secure the artery. This was

* Morgagni de Sed. et Caus. Morb. Epist. xxxvi. 11. xxxviii. 34. lvii. 10. xlvii. 8.

† Precis de la Medecine Pratique, tome i. p. 132. Paris, 1769.

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performed, but the case terminated fatally. All the viscera were found in a healthy condition; "sed vasa universi corporis, majora, minora, ita ut flaccida, et vacua invenimus, ut sicciorum anatomen nemo viderit. Sanguis unice inventus est fluidissimus in basi cranii ad uncii, copiam effusus, ita ut ibidem videatur vasculum fractum fuisse."

The second case is that of an individual affected with gout. The whole extent of the aorta, the emulgent arteries, the iliacs and femorals presented their ordinary size, but were flaccid, and contained no blood, except an attenuated elongated fibrinous mass of unequal dimensions, the greatest thickness of which did not exceed six lines, and in many places was not more than a line in thickness. The right auricle of the heart merely contained a slight fibrinous concretion, and the subclavian and caroted arteries were occupied by a filamentary band of the same kind, of a line in thickness. The vena cava and the emulgent veins were larger, but empty like the arteries; merely containing a kind of fibrinous string. The pleura of both sides was distended with a serous effusion, but no more blood was observed here than in other parts of the body. It should be remarked that in both these cases, and especially the last, the pulse continued full and strong even up to the period of the fatal termination.*

Notwithstanding the accurate representation of the disease furnished by the several authors referred to, it was but little noticed by pathologists until it became a subject of increased interest, in consequence of the whole of the laborers in a particular gallery of a coal mine at Auzain, near Valenciennes, becoming attacked with it in succession. An excellent description of this epidemic anæmia has been furnished by Hallé, † from which it appears that the disease was confined to a single gallery of the mine, although the others were similarly constructed, all of them being moreover of nearly the same depth; one hundred and fifty toises. The infected gallery was only somewhat longer and not so well ventilated, and its atmosphere was so impure as to occasion considerable embarrassment of the respiratory function. Yet, notwithstanding this condition, some of the miners pursued their occupations in this contaminated medium, three or four months before they became attacked with the disease. The sufferings of the individuals effected with it

* De Haen, Ratio Medendi, tome vi. p. 101–115. Vienna, 1761.

† Journal de Medecine, tome ix. p. 3. 1795.

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were extreme, and notwithstanding the free employment of bark, camphor, opium, wine and analeptic diet, &c., many of the cases terminated fatally. Four of the individuals affected with the malady were conveyed to Paris, and were received into one of the hospitals, where they were visited by a special committee, and Hallé was selected to conduct the treatment. The remedies which he found most useful, were equal parts of iron filings and cinchona, under which a progressive improvement was manifested.

Since that period, the disease has been so often described, and examples of it have been so multiplied, that it would be an act of supererogation to notice all the accounts which have been published.

Sec. II. *Pathology of Anæmia.*—Were we to restrict the term to its proper acceptation, it would convey the idea of a total absence of the blood: we shall employ it in a more extended sense, to designate that condition of the blood which either consists in such a defect of quantity, not proceeding from any inordinate evacuation, as is incompatible with the healthy exercise of the functions, or is characterised by such a marked deficiency of its plastic materials, and especially of its fibrine and hæmatosine, as to render it unfit for the purposes of healthy nutrition and the other offices which it is intended to subserve.

Considered under this acceptation, anæmia may be either geeral, or local, and may, besides, exist as a primary and independent disease, unpreceded by any apparent organic lesion, or as a mere concomitant, complication, or condition of some other malady. This latter distinction will apply whether the disease appear in a local or a general form. Notwithstanding, therefore, it will be exceedingly difficult to decide satisfactorily in all cases, whether there has been any pre-existing organic lesion or not, we shall divide the disease into *simple* and *complex* anæmia, including under the first head such cases as cannot be clearly traced to such a cause, and under the second, those in which the pathological state of the blood has been preceded by, or is accompanied with, some other disease, of which it is a mere consequence, or accidental complication.

a. Simple Anæmia.—This form of the disease may occur at any period of life. We have witnessed cases in early childhood as well as in advanced life, and even those in the most vigorous period of existence, when exposed to its causes, not unfrequently become its victims. Its symptoms, moreover, though

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in some respects common to all cases, present considerable variety, dependent on the intensity of the disease, its extent, its duration, the parts affected, and other circumstances. It sometimes happens that individuals previously in the enjoyment of good health, experience a gradual falling off in their energies, and a progressive enfeebling of their functions, without being sensible of any adequate cause to occasion such a change. The countenance becomes pale, and assumes a yellowish waxen hue, the skin being frequently rendered almost transparent, but occasionally somewhat dark, sallow, and more or less mottled. The countenance is generally œdematous or *boursouflé*, and the same condition is generally observed in the ankles, and the cellular tissue generally, which seems moreover, to lose its natural elasticity, and with the skin, becomes pale and exsanguined. The tunica conjunctiva, both ocular and palpebral, is perfectly blanched, and exhibits little or no traces of the blood vessels which traverse it in such number in its healthy state. The veins of the skin likewise collapse and disappear, even in situations in which they naturally exist in great abundance, and the capillary vessels of the whole superfices of the body, of the lips, the lining membrane of the mouth, and of the tongue, are so completely empty and collapsed, that a general pallor pervades all these parts, and they seem to be divested of every particle of blood. While the tongue presents this blanched appearance, it is generally a little moist on the edges, but covered along the middle, and about its base, with a whitish colored furr or pellicle, which is nevertheless sometimes brown, dry, and scabrous. There is also in many cases a diminution of animal temperature, over the whole surface of the body; but this is far from being constant, and it is not unusual for an opposite condition to prevail, especially when the disease is accompanied with a febrile state.

The digestive organs very generally exhibit evidences of more or less disturbance, even from the onset of the malady, and derangement of the stomach and bowels may be considered in some cases as forming the proper prodromus of the anæmic state. This was very strikingly observed in the cases of the miners of Auzain, in which the first indications of an attack were violent colics, meteorism of the abdomen, black and green dejections from the bowels, &c. The symptoms, however, are not always thus urgent. Frequently there is only some perversion of appetite, eructations, occasional nausea, flatulency and alternate states of constipation and diarrhœa. We have seen these

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latter symptoms continue throughout the whole course of the disease, though the diarrhœa often obtains the ascendency. The appetite is almost always capricious and deranged. We have seen it only a little enfeebled, but more frequently it has been increased and anomalous; and sometimes, indeed, it has been so insatiate as to amount almost to a state of *bulimea* or *pica*. Individuals have not only manifested a singular predilection for certain crude and indigestible substances, but were constantly harrassed with a distressing sensation of knawing, emptiness and oppression about the stomach, which could only be appeased momentarily by even enormous quantities of food. This we have had occasion to observe in numberless instances of individuals of the poorer classes of society, who inhabit the most malarious and insalubrious districts of the lower part of Carolina, where, in consequence of their living in the midst of pestiferous exhalations which poison and contaminate the fountains of life, without an adequate supply of healthful nutritive alialiment, of which many are deprived in consequence of the barrenness of the soil, and a want of sufficient energy to cultivate the fruits of the earth, anæmia is a very common condition. The disease is, indeed, so prevalent throughout nearly the whole extent of the low and swampy districts in the lower part of the state, that the bloated and waxen countenances, the tumid abdomen, the general aspect of bloodlessness, and the extreme state of bodily and mental imbecility, presented by immense numbers of the poor classes of the population, strike every stranger as presenting something peculiarly outré and incomprehensible. Their general appearance, together with the urgent craving generated by the state of their digestive organs, for clay and the absorbent earths, have incurred for them, from their more healthy and mountainous brethren, the appellation of *sand-lappers*, or dirt eaters. In most of them, the abdomen is tumid; the cellular tissue is more or less loaded with fluid, and general dropsy frequently terminates their existence.

The respiratory function is more or less disturbed in all cases of anæmia. The breathing is generally oppressed and hurried, and under the influence of even moderate exercise, it becomes irregular, and even panting, threatening in some, immediate suffocation.—This is particularly manifest on ascending a flight of stairs, or walking rapidly;—and together with the difficulty of breathing, there is such a degree of muscular debility, that moderate exertion occasions immediate exhaustion. In a case of general anæmia which fell under our observation in the

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course of the last twelve months, every effort to speak was attended with yawning, and apparently with a slight convulsive quivering of the lungs and diaphragm. The imperfect hæmatosis, which forms so striking a feature of the disease, renders it probable, that besides the sensible phenomena manifested by it through the pulmonary function, there are others of a rational character even more important, and involving directly the properties of both the blood and innervation, so far as respiration and the ordinary chemico-vital changes which it effects, are concerned.

The symptoms manifested through the heart and arteries, are even more extraordinary.—The pulse is sometimes small, frequent, thread-like, and vibratory throughout the entire progress of the disease, and the heart, though its impulse is feeble, pulsates rapidly, as though its susceptibility was inordinately augmented, with a corresponding diminution of its power of contraction. Its rhythm is also sometimes disturbed, and it seems to act with a peculiar thrill, as though convulsed by the passage of the blood through its cavities.—On applying the hand over the præcordial region, its actions are very perceptible, but a sensation is communicated, which conveys to the mind the idea of an attenuated fluid passing through a hollow organ with great rapidity, without fully distending its walls.—Sometimes the pulse is but little increased in frequency, but is only feebler and smaller than in health, and feels under the finger during each pulsation, as though the wave of blood was insufficient to fill its calibre. More frequently the disease is accompanied by various febrile phenomena, differing much in intensity at different periods, and subject to very frequent and sudden modifications.—The heart under such circumstances generally labors violently, and is affected with palpitations: sometimes indeed its throbbings are tumultuous, as are the pulsations about the neck and all the large vessels; and the pulse in such cases, is generally full, though feeble, and as we have had occasion to observe in several cases, presents that peculiar character which was described by Rush under the name of *shattered pulse*, from the similarity imparted by it to the finger to that which is communicated by a crushed goose quill. In a case of fever attended with extreme anæmia, which fell under our observation during the last summer, this character of the pulse continued throughout the whole progress of the disease.—We have often witnessed such a pulse in the course of several acute diseases, and have almost invariably, when an opportunity of ascertaining the con-

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dition of the blood existed, found that fluid presenting a great predominance of its watery part. The most remarkable circumstance relating to the tumultuous action of the heart and arteries in anæmia is, that although the blood is impoverished and reduced to a mere remnant which barely deserves the appellation of blood, and the whole constitutional energies are prostrated, they continue to throb and pulsate violently even to the end, after the individuals have been rendered so feeble as to be unable to help themselves, or even assume the horizontal position, without falling into a state of syncope. This circumstance has been noted by many of those who have attended to the phenomena presented by anæmia. In one of De Haen's cases, it continued until within a few hours of the period of dissolution; and a similar condition of the pulse was observed in some of the examples published by Morgagni. Dr. Jackson remarks, that in his first case, slight exertion produced universal lassitude and fatigue, excited palpitation of the heart, a throbbing, obvious to the eye, above the sternum, and on the right side of the neck, and caused a sense of beating in the head, and through the limbs to the ends of the fingers.—On being requested to ascend a stairs and return, on entering the room the patient threw herself into a chair, with the exclamation that "she was nearly gone." She exhibited a picture of exhaustion. Her limbs hung relaxed, her head fell on her shoulder, she panted violently for breath. The throbbing above the sternum and on the sides of the neck was violent. The heart palpitated excessively—its contractions were tumultuous so as not be counted, and were sharp and strong.—The pulse, indeed, sometimes presents such a semblance of strength and inordinate activity as to lead to the commission of the error of practising venesection. We were led into this mistake in the first case of anæmia which fell under our observation. The subject was a young man, whom we were called upon to treat for general dropsy. The heart and whole arterial system seemed to be in a state of such intense commotion, that the pulse being at the same time full and bounding, we deemed bloodletting to be imperiously demanded, notwithstanding the blanched and waxen aspect of the individual, and the prostration of his vital energies. The operation was accordingly performed; but what was our astonishment when instead of blood, a thin purplish colored watery fluid flowed from the vein, with barely color enough to stain the bed linen on which some of it dropped. The arm was bound up before any mischief could be produced, and the

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antiphlogistic course, which was at first proposed, was exchanged for ferruginous preparations, the vegetable bitters, diuretics and a generous diet, under which all the symptoms rapidly subsided. In Dr. Jackson's case just referred to, the throbbing of the heart and of the arteries about the neck, was so violent as to lead to the supposition of the existence of aneurism about the arch of the aorta and the annominata, and it was only after venesection had been practised, that the true nature of the case was discovered. The same state of the pulse is observed after excessive losses of blood, and has in too many instances led to the fatal error of abstracting more of the vital fluid, when the vessels had been already nearly drained.

The other phenomena presented by anæmia are extreme prostration of muscular energy, considerable emaciation, a disturbance or perversion, more or less considerable, of innervation, sometimes derangement of the secretions, and in a large majority of cases a peculiar tendency to give rise to a copious exhalation of serous fluid into the cellular tissue, and the splanchnic cavities, occasioning either local or general dropsy. It is in consequence of this tendency of anæmia to terminate in serous effusions, that dropsy is so often found associated with it, and is erroneously regarded as the cause, when in reality it is only the consequence.

The encephalic organs seem to suffer much disturbance under the influence of general anæmia, or even local anæmia, when it affects the brain. Individuals are frequently distressed with an unpleasant noise or ringing in the head or ears, occasionally alternating with pain, and the senses of sight and hearing have been found occasionally so morbidly acute as to be painfully affected even under slight degrees of stimulation from light and sound. There is also in some, such a degree of watchfulness, that the inability to sleep increases still more the debility and exhaustion. It is indeed by no means unusual to see individuals affected with this condition, presenting all the symptoms of arachnitis, or even becoming delirious, or falling into violent convulsions,—conditions which are also often observed after profuse losses of blood, either by the intentional abstraction of that fluid, or by hemorrhage.* Sometimes the whole nervous system acquires such an exalted susceptibility, that it is kept in a state of perpetual commotion, even under the influence of ac-

*Morbid and curative effects of loss of blood. By Marshall Hall, M.D. Philad. 1830.

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customed impressions. The opposite condition, nevertheless, often prevails,—the nervous apparatus participating apparently in the general torpor which affects the other parts of the organization.

b. Anatomical Characters of Anæmia.—The appearances exhibited by the bodies of those who have died of simple anæmia, are in some respects very variable; but in all a blanched aspect of the tissues more or less considerable is apparent. When the anæmia is local, this condition is confined to the affected organ. But when it is general, this character generally pervades most of the tissues. It should nevertheless be remarked, that in some cases, where a general blanched condition of the organization exists, the muscular tissue retains its natural color. We have observed this in two or three cases. In a maniac whom we treated for sometime, and who finally died in a complete state of bloodlessness, the muscles of voluntary motion exhibited as deep a hue of red as in a state of perfect health, and were but very slightly atrophied, although the individual had been for some time incapable of helping himself, in consequence of the loss of his muscular energies. A boy who lingered for some time under a febrile form of anæmia, in which the bloodlessness was so considerable that blood could not be abstracted by cupping, the voluntary muscles presented the same character, except that they were more atrophied. Their deep flesh color contrasted strongly with the extreme whiteness or pallor of all the other structures. Their color was indeed rendered apparently more intense by this contrast.

While the tissues and organs exhibit this extreme paleness and deficiency of blood, they have a preternatural appearance of dryness. This character was particularly noted by De Haen, Lieutaud, and several of the early writers who described the disease, and has been observed by nearly all who have had occasion to examine those who have died of it. It is nevertheless far from being constant, and it not unfrequently happens, that while some of the organs are apparently divested of blood and all other fluids, others are completely loaded with serous infiltrations, as are also the several splanchnic cavities. This latter state exists more or less in a large majority of cases, and forms, as has been already remarked, a striking feature of the disease. The coincidence between dropsy and anæmia must indeed have struck every pathologist of extensive observation, and in many such cases the most careful observations after death have not been able to detect any appreciable organic lesion.

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We have repeatedly observed such cases:—Andral has described several examples, and the annals of the science abound with them.

We have before remarked that more or less atrophy is an ordinary accompaniment of anæmia. It exists in various organs, but does not usually affect all parts of the body equally. We often find an anæmic organ atrophied to a considerable degree, while others, in which the supply of blood is defective, do not seem to be much wasted. But as a general rule, it may be affirmed that anæmia is attended with atrophy; nor can this excite our surprise, inasmuch as the same causes, which interfere with the process of hæmatosis, or which prevent the formation of a sufficient supply of healthy nutritious blood, will extend their influence to the acts of nutrition themselves, and as the blood is rendered less plastic, will interfere with the deposite of an adequate supply of nutritive molecules in the substance of the different tissues. It may happen moreover, when the anæmia is local, that the atrophy will be confined to the organ affected, while an opposite condition, or one of hypertrophy will implicate some other part.

Anæmia is also attended with other modifications of nutrition. Coexistent with the diminished crasis of the blood, there is in most cases a corresponding enfeebling of the vital cohesiveness of the organic molecules. The tissues are accordingly rendered fragile, soft, and incapable of resisting much force. Where there is a serous infiltration, the remollissement does not exhibit that character of humidity by which it is distinguished when it arises from other causes. But the tissue is merely dry and fragile, and tears, breaks, or crumbles to pieces under the influence of mechanical causes, rather than resolves itself into a soft diffluent pulp. When there is infiltration, however, it is more or less humid, and is characterised by those conditions which are manifested in the tissues in those who have died of dropsy from common causes. In that disease there is a remarkable fragility or softening of nearly all the tissues.

But of all the anatomical characters presented by the bodies of those who have died anæmic, those furnished by the blood itself are most interesting.—We have already remarked, that the defect of the blood may implicate all its constituents, or that it may be confined to the crasis and hæmatosine, the serum being even increased. In the first case, when the body is opened, the vessels are found in a complete state of vacuity and perfectly bloodless, and the tissues dry and drained of their fluid; or

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there will merely be a few shreds of coagulum lodged in the vessels in the vicinity of the heart, or in the cavities of that organ itself. These dispositions were observed by Schwenke, Lieutaud, De Haen, &c., and have been particularly noted by most of those who have observed the disease subsequently. Sometimes, instead of the slender coaguli, a small quantity of half fluid grumous blood of a dark color will be found in the large vessels, while all the others present a complete bloodless condition. More frequently, the small quantity of blood which remains, is of a pale color, containing a predominance of serum and a deficiency of coloring matter.—It often consists merely of a thin lightish colored gore, the faculty of coagulation being entirely extinct.

When the anæmic state consists more particularly in a defect of the more solid and plastic materials of the blood, and of the coloring matter which constitutes the most striking feature of its individuality, other modifications are observed. The vessels circulate a considerable quantity of fluid, but it is frequently a mere stained water, divested of nearly all plasticity,—consequently incapable of coagulating, and utterly unfit for the purposes of nutrition.—The crasis no longer exists, or it is present only in a sparing degree; the blood globules therefore are so few in number that the blood often seems to be entirely destitute of them. Every thing seems to be supplanted by the serum, and even that constituent is divested, in a great degree, of its albumen, and probably also of its saline ingredients. Hence the serum effused under such circumstances, does not ordinarily throw down so dense and abundant a coagulum on the addition of heat or nitric acid, as that which is poured out under the influence of inflammation. Of the importance of these conditions of the serum and saline particles of the blood, we shall have occasion to speak in another place.—With the defects enumerated, there is likewise a deficiency of fibrine and hæmatosine, and to this circumstance are owing the want of coagulability, and the feeble color exhibited by the blood. In this latter respect it presents many varieties: sometimes the coloring matter exists in such sparing quantity, that the blood merely resembles water slightly stained with red or purple. This latter was the character of the blood in the boy affected with dropsy, to whose case reference has already been made. It contained so little coloring matter, that the drops which fell on the bed linen merely left a purple stain.—This fluid also presents, in some cases, a slight greenish tinge; and it has been

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remarked by Hoffman, that where the blood is preternaturally fluid, a greenish colored pellicle sometimes forms upon its surface after it has been allowed to stand.

But whatever be its condition, the vessels are always almost entirely empty,—so that when the organs are incised, no blood escapes, or barely a sufficiency to produce a slight coloration of the surface of the incision. Where the anæmia has existed for a length of time, especially if local, and affecting a parenchymatous organ, the smaller vessels often become invisible, and there is reason for supposing, that many of the more minute ramifications may become completely obliterated.

These may be regarded as the most usual anatomical characters of simple anæmia; but in the complex forms of the disease, or those in which it is complicated with some local organic affection, various lesions will be observed in those organs the sufferings of which have had an agency in developing the perverted state of the process of hæmatosis. They need not be detailed in this place.

c. Physiologico-pathological considerations.—The correlationship which exists between the blood and the solids through which it circulates, is so intimate, and any perversion of the vital acts or properties of the one so speedily extends its influence to the other, that it is often difficult or impossible to decide which takes precedence in the order of the morbid concatenation which ensues. This is especially true of the affection now under consideration, in which we cannot always determine whether the condition of the blood is properly a primitive one, or whether it is not in all cases dependent on some pre-existing disturbance of the organic solids. Such an approximation to truth may, however, be obtained, as to render it at least probable, that both propositions are true when examined in relation to the entire range of cases. This opinion will be corroborated by an examination of the causes of the disease, and of the manner in which they operate in giving rise to it.

These causes are exceedingly variable and numerous, and besides those which are known, there are doubtless many others, which in the present state of the science we know not how to appreciate. To enable us to form clear views of the nature of the malady, and to appreciate its effects, it will be necessary for us to consider the most important of them, and to endeavor to trace out the process by which they lead to the ultimate mischief which they are instrumental in developing.

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a. Defective alimentation will always give rise to anæmia, the extent being in most cases in relation with the degree of the privation. The histories of those who have died of inanition, and of individuals who, from shipwreck and other causes, have been submitted to extreme privations, furnish some very important data bearing upon our subject, and throw considerable light upon the effects which are frequently induced both in the blood and in the organs themselves, by a defect of nutritive aliment.—Similar phenomena have been repeatedly observed under the more severe visitations of famine, when entire districts of country have been reduced to extreme suffering, from being deprived of a sufficient supply of healthy food to satisfy the cravings of nature. The annals of history afford many such examples, and one which is directly applicable to our subject has been reported by Gaspard. He remarks that nearly the whole of the population of a district of country, who were compelled by famine to subsist for some time upon the common herbs and grass of the fields, were reduced to an extreme state of anæmia, and most of them became dropsical.* In a case of death from inanition, the particulars of which have been very fully reported by Desbarreaux Bernard, the emaciation amounted to the last degree of marasmus; every part of the body except the medullary cavities of the bones was entirely divested of fat; the viscera were completely exsanguined, and the brain, spinal marrow, mucous membrane of the stomach and intestines, the liver, spleen and kidneys were greatly indurated; the heart was flaccid, pale and extremely soft, and the muscles were in an extreme state of atrophy. Nearly the same phenomena were observed by Rolando and Gallo in the body of Anna Carbero who died at Turin from the same cause.† To the same point, the observations of Foderé may also be cited. He remarks, after describing various other phenomena, that the blood vessels of those who have died of inanition, are almost void of blood, but that the lacteals, where the death has been recent, possess so much activity, that fluids injected into the intestines are absorbed with extreme rapidity.

Some very interesting researches have been made on animals by Collard de Martigny, which furnished similar results. The subjects of his experiments, after indescribable sufferings, died in an extreme state of emaciation. Besides other lesions,

* Magendie, Journal de Physiologie.

† Dict. de Med. 2d. ed. tome i. Paris, 1832.

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the tissues were found completely divested of blood; the heart was small and had its walls soft, flaccid and attenuated. It and the larger vessels merely contained a very small quantity of black, loosely coagulated blood. The lungs possessed their crepitating property, but were exsanguined, and their vessels were merely moistened with a small quantity of serosity. The mucous membrane of the trachea, bladder, &c. were remarkably pale, and the liver, spleen, pancreas and kidneys were pale, dense and completely devoid of blood, as was likewise the vena portarum. The organs seemed indeed to be reduced to their proper parenchymatous structure. He remarked, moreover, that while the quantity of the blood is reduced to almost nothing, its properties undergo important modifications: the albumen is increased, while the fibrine is diminished. From the eighth day of abstinence the quantity of fluid in the lymphatic vessels diminished progressively, and by the period of dissolution only a small quantity was found remaining in the thoracic duct. During the first eight days, however, the lymph was increased in quantity.*

These experiments are not only interesting as shewing that an extreme degree of anæmia may be speedily induced by abstinence or privation of food, but likewise as illustrating the steps adopted by nature to supply the exigencies of the economy which are developed under such circumstances. Thus from the augmentation of the lymph which was manifested during the first eight days, it is apparent, that the supply of nutritive aliment being cut off through the ordinary channels, a temporary compensation was attempted to be supplied from the secrenumtitious materials derived from the solids and fluids already existing in the body. This would materially hasten the emaciation while it would contribute for a time to prolong life. But it could not continue beyond a certain point: for as soon as these sources become incompetent to yield a further supply, the anæmic condition would increase rapidly, with a corresponding augmentation of the evacuation and other phenomena which precede death.

The same observations and experiments tend to show, that the effects of inanition are analogous to those of anæmia arising from other causes. A striking feature in both cases is the extreme disturbance manifested in the functions of the brain and

* Collard de Martigny Recherches sur les effets de l'abstinence complete, &c. Magendie Journal de Physiologie, t. viii. p. 152.

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nervous system generally. A most horrid picture of sufferings from this cause, has been furnished by Savigny, in his account of the wreck of the Medusa. He remarks that he experienced such an extreme degree of excitement that he could not control his movements. His circulation was greatly accelerated, and he felt as though his blood boiled in his veins. This cerebral and nervous excitement was experienced by all his companions, and in many of them, it gradually amounted to delirium and absolute phrenzy. In some, this fury was of the most appalling character, and was restricted within no bounds. They were alternately impelled, as by a blind ferocity or murderous cruelty, to wreak their homicidal enonomania upon their companions, and in the next moment, to prostrate themselves before their superiors, in a state of supplication, asking forgiveness for the deeds of their madness. All their actions seemed to be the offspring of phrenzy and perfidy, and so far were they divested of all reason, that even when reduced to the extremest state of suffering, they not only attempted the most atrocious acts of violence upon their innocent companions, but even endeavored to throw into the sea what little wine and refreshments had been still preserved on the wreck to sustain the sinking energies of the unfortunate crew.

This state of hyperæsthesis is a common consequence or attendant in anæmia induced by other causes. There is very commonly an extreme mobility of the nervous system induced,—a restless, unaccountable excitement of the mind, delirium, insanity, and even violent spasms and convulsions. These phenomena are, however, only observed in extreme cases.

It is scarcely necessary to remark, that an impure, unhealthy aliment will often give rise to anæmia, as well as a partial or total abstraction of that which is proper for the purposes of subsistence. In either case, the mischief is owing to the inadequate supply of nutritive molecules, and there being nothing to repair or replenish the perpetual waste of the system, serious and alarming consequences rapidly ensue.

b. An impure air, or an inadequate supply of oxygen, may be next enumerated in the series of causes; for while the food and drinks are indispensable to sustain life, they can only be fitted for that purpose by a free commerce with the pure and vital air, after they have entered the compages of the system. The causation of anæmia through atmospheric influence may be regarded as two fold;—first, the simple privation of oxygen, thus occasioning an interference with those important changes which

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are effected in the properties of the blood by respiration; and secondly, where it is contaminated with some principle deleterious to animal life, which being conveyed with it into the system, disturbs the acts of hæmatosis, nutrition, and the other healthful operations. Examples of the first are rare, because there are few situations in which a sufficient supply of oxygen does not exist in the atmosphere for all the purposes of life, but of the operation of the second, we are made sensible by daily observation. The multifarious pursuits of man, his poverty and misfortunes, are constantly throwing him into situations in which he is obliged to subsist in the midst of an atmosphere contaminated with elements unfriendly to health, and subversive of the harmony of its operations. The profound and suffocating depths of mines, the filthy damps of the dungeon and the prison-house, the diversified laboratories of human industry, the work shops of certain arts and trades, the hells of filth, vice and corruption which exist in many populous and crowded cities, and the pestiferous exhalations, which are constantly teeming from the surface of the earth in low and malarious districts,—all furnish numerous exemplifications of the agency of this cause in the production of anæmia. It has been already remarked, that in the gallery of the mines at Auzain, in which the disease occured, the atmosphere was so impure as to occasion great difficulty of respiration—the temperature of this gallery was about seventeen to twenty-two R. and the air within it was found by Liégeard on analysis to contain sulphureted hydrogen, and a considerable quantity of carbonic acid gas, both of which it is well known exercise a highly deleterious influence on animal life. A case of anæmia in a youth, aged fourteen years, has been reported by Guersent, which owed its origin to the same cause. The individual had been employed in the coal mine, at Valenciennes, and died completely anæmic in the hopital Des Enfans-Malades.* It has also been repeatedly remarked, that the workers of copper, lead, quicksilver, and other mines, become pale, emaciated, sickly and bloated. The deleterious exhalations to which they are constantly exposed, gradually undermine the constitutional energies, and poison the springs of life. The smelters of many ores are especially apt to suffer in this manner, and it is highly probable that the fumes of some of them, as for example, arsenic, lead, copper, mercury, &c. exercise a direct deleterious influence on the nervous system, which

* Dict. de Médecine. Art. Anæmie, p. 583.

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being extended to the respiratory, nutritive and other functions, disturb the process of hæmatosis, modify the nutritive molecules, and pervert the whole train of healthy actions. Anæmia has been frequently induced in this manner, and even in the disease denominated colca pictonum, it has been often found by dissection to constitute the most striking post mortem phenomenon. Some cases reported by Andral, (Clinique Medicale, t. iii.) fully confirm the correctness of this view. The only pathological state manifested after death was an anæmic condition of the alimentary canal.

The general pallor, emaciation and annihilation of the bodily and mental energies which we observe in those who have been for some time incarcerated in dungeons and other foul and contaminated situations, excluded from the pure and invigorating atmosphere, sufficiently proclaim the deleterious influence of a contaminated atmosphere. The agency of malaria has already been adverted to. Where it exists abundantly, whole districts of country bear traces of its pernicious influence. The waxen-like hue of the skin, the bloated countenance, tumid abdomen, œdèmatous extremities, the blanched character of all the tissues, the impoverished watery blood which traverses their vessels, together with the extreme imbecility of their corporeal and intellectual powers,—all declare the operation of some baleful influence, poisoning the streams of life, and diffusing its deadly contamination throughout the whole animal economy. These effects are not confined to our own country, in the marshy and malarious districts of which we have already remarked they are common, but exist wherever such poisonous exhalations are generated. Walcheren, the marshes of Italy, and the plains of India, furnish ample and sad illustrations.

But while the agency of this cause in the production of anæmia is unquestionable, it is not so easy to determine how it produces such effects,—whether this is merely accomplished through an impression made directly on the nervous system, and propagated from thence to the apparatus of hæmatosis, or whether they are not induced by the previous development of some organic lesion, in parts which are concerned in the accomplishment of that important act of the animal economy. That it may operate in the first of these ways we may infer, as well from its known effects upon the system, as from the fact that any cause capable of embarrassing for some time the regular harmony of the respiratory function, will give rise to anæmia and other perversions of the healthy properties of the blood. Various

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pathological states of the nervous system produce the same effects as we shall presently attempt to prove, probably by suspending or deranging the transmission of that influence which is indispensable in the complex acts of respiration, hæmatosis, and nutrition and secretion generally. But while this may be conceded, there are cogent reasons for believing that the anæmia is often produced by the second process. The enlarged and diseased liver and spleen,—the pathological states of the mucous membrane and other organs, which are usually observed in such cases, favor the conclusion, that they have an intimate relationship with the process of hæmatosis, and that the anæmia is owing to some disturbance of their functions.

From the known effects of *light* on vegetable and animal life, it is probable that it often exercises more or less influence in the production of the state of the blood under consideration. Vegetables which are excluded from the light become pale and sickly; they lose all the richness of their hues, and become divested of many of the properties which are common to them under other circumstances. The same influence of light is manifested in its operation on animals. In the tropical regions, all animals are characterised by the richness and variety of their hues. In high latitudes on the contrary, where the influence of the solar rays is less intense, they are pale, white, and exhibit none of the vividness observed under more congenial skies. Even man participates in these modifications. Light and heat are indispensable to the full and perfect evolution of his corporeal energies, and the observations of Humboldt, and other travellers, have accordingly shewn, that he presents the fullest development of his muscular powers beneath the equator, while it is equally demonstrated by others, that in polar regions, he is pale, feeble, and dwarfish in his conformation, like the stinted vegetation which surrounds him. It has been remarked, however, that those whose occupations confine them to dark situations,—who inhabit low and confined localities, and who are for a length of time cut off from the genial influence of solar light, become pale, bloodless, emaciated, feeble, and dropsical, and present in short, all the characters of anæmia. Even those whose post on ship board is below decks, are represented by Delivet as subject to these modifications; and the same changes have been observed in different degrees in the workers of mines, prisoners who are restricted to the dark and gloomy precincts "of the dungeon keep," and those individuals who inhabit dark and low situations, where the rays of the sun never penetrate. The

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case of the unfortunate Casper Hauser, furnishes a satisfactory exemplification, and the experience of every despotic government could furnish many others of a similar character.

How the absence of light produces this unhealthy and enfeebled condition of vegetables and animals is difficult to determine. It is not from the simple abstraction of stimulus; for if that were the case, others might be substituted: but it is probably owing to the necessity of its presence to insure the full and perfect accomplishment of those chemico-vital acts, upon which hæmatosis, as well as many other important changes of the animal economy depend.

Electricity also demands our attention as one of the causes of anæmia. Of the precise influence of this all pervading principle upon the animal economy, we unfortunately know but little; yet what we do know is sufficient to convince us, that it plays an important part in both health and disease. We are sensibly affected by electrical changes of the atmosphere:—we are alternately invigorated and enfeebled by its positive or negative conditions; and some researches which have been made by Vacca Bellingieri, and others, render it probable that it not only impresses important modifications upon the solids of our bodies, but that many of the changes which take place in the blood are owing to its agency. He even contends that this fluid possesses a portion of electricity which is proper to it, and which is independent of the electrical changes of the atmosphere. This however, he found to be very sensibly varied by disease. From numerous experiments made on the blood drawn from persons laboring under different diseases, he deduced the following conclusions. 1. That the blood in each malady possesses its peculiar state of electricity. 2. That in health this fluid is in a positive state of electricity, while in acute inflammation the electricity is negative. 3. That the serum, separated from the crassamentum ceases to influence the electrometer.*

These conclusions, taken in connexion with the facts established by Van Marum, Humboldt, Berzelius, Scudamore, and others,—that electricity is directly associated with the development and disengagement of animal heat, render it extremely probable, that this imponderable agent is more intimately concerned in various pathological states of the solids and fluids than is generally suspected. From the diminution of the quantum

*Sulla electricita del sangue nel malattii sagio de esperimenti, Annali Univers. di Med. del Dott. Omodei, 1819.

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of electricity, or as expressed by some, the change of its quality, observed in the transition from health to disease, and from the corresponding increase of the serous, and diminution of the fibrinous portion of the blood which takes place under the same circumstances, it is possible that the electric principle, in experiencing this deterioration, may finally reduce the blood to that extreme state of impoverishment, or fluidity, which exists in anæmia, and in which it ceases to exercise any influence upon the electrometer. This, however, must be regarded merely in the light of a conjecture. Our knowledge on the subject is altogether too limited to justify any positive conclusions, and further observations will be necessary before we can rely with certainty upon any which may be formed.

The causes which have been enumerated, may be viewed partly in the light of the abstraction of the material elements which are indispensable to our well being, partly as a withdrawal of necessary stimuli, and to a certain extent, as deleterious agents capable of producing more or less perversion of the healthful acts of the organism. It is questionable, if the simple abstraction of ordinary stimuli, without the co-operation of other causes, could ever induce anæmia, except when the stimulus withdrawn, is of that character which is introduced in form of the natural pabulum of the system. Yet where there are other circumstances operating, which tend to effect this change in the blood, any diminution of the accustomed excitation could not fail to hasten its developement.

The state of the organization itself has an important participation in creating a tendency to anæmia. This is especially true of the nervous system, and more particularly of the ganglionic portion of it. What this condition may be, it is difficult to decide, but there are circumstances which render it probable that it may be very opposite in different cases. As the acts of digestion, circulation, hæmatosis, nutrition, depuration, &c. are all intimately dependent upon the nervous system, whatever enfeebles its energies, or perverts its powers, will impress corresponding modifications upon the acts placed under its dominion. Changes may therefore be induced in various situations, which may conduce to the anæmic state. Chylosis may be rendered imperfect; the proper changes may not be effected by respiration; hæmatosis may be incomplete, the blood being deficient in some of its natural constituents; it may be imperfectly distributed, and finally some perversion may take place in the acts or assimilation. One of these conditions may exist alone, or several, or all

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of them may concur, the nerves by which they are all directed being in a condition to render them incompetent to perform their proper offices. The influence of the nervous system over properties of the blood is proved by so many facts, that it would be an act of supererogation to attempt to sustain it by arguments. Every disturbance of any intensity affecting the one, modifies the other. Even the passions and emotions of the mind produce important changes in the blood, diminishing its coagulability, and frequently changing its color. Cases have been reported by Le Cat, Rostan, Fardeau, and others, in which the whole skin became suddenly almost as black as that of a negro, in consequence of violent fright. The dissolved and impoverished state of the blood in malignant and other fevers, in which the nervous system is profoundly implicated, is too well known to require comment. It has indeed been contended by various physiologists, since the time of Haller, and especially by Treviranus, that the blood possesses, to a certain extent, a self-moving power, depending upon its own vitality. If then the energy of this faculty, as well as its plastic force, is maintained by the agency of the nervous system, it must be apparent that any derangement of its functions,—any diminution, increase, or perversion of innervation, will not only modify its composition, but also its vitalism. These modifications are sometimes instantaneous. This is demonstrated by the facts stated above; and is corroborated by the circumstance mentioned by Gendrin, that blood which is drawn during syncope does not form the buffy coat.

It is, therefore, clear, from all these considerations, that a torpor of the ganglionic nerves, or of these, together with the nervous system of animal life, may not only favor the development of anæmia, by impairing the acts of chylosis, hæmatosis, and even of nutrition proper, but likewise by influencing directly the mass of blood itself, diminishing its plastic properties, divesting it of its fibrine and hæmatosine, and favoring, at the same time, the development of an inordinate quantity of serosity. The derangement of chylosis from this cause, may occasion either a defective supply of nutritive molecules, or impress upon them such modifications as to render them unfit to form healthy blood. The same cause, acting upon the apparatus of respiration, may prevent the development of those changes of the materials of the circulating fluids, which are indispensable to convert them into arterial blood, and to prepare them for nutrition. It is well known, that in these acts, the nerves perform an im-

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portant part, and that without their influence, the blood cannot acquire those qualities which are necessary to fit it for the purposes which it is intended to subserve. When the pneumogastric nerves are divided, respiration can be artificially sustained for some time; the ordinary chemical changes can be produced; the blood continues to undergo its usual changes of color, but its vitalism is extinguished, its caloricity is destroyed, and it is no longer proper, either for the purposes of nutrition, or any of the other offices to which it is subservient. Diminished innervation, acting through this channel, may, therefore, by successive modifications of this kind, give rise to such a deterioration of the blood, both as regards quantity and quality, as to lead directly to the development of anæmia, with all its attendant complications. Hence, a protracted disturbance of the respiratory function has often been observed as an antecedent of this disease, and for the same reason, anæmia is a common concomitant or consequence of phthisis pulmonalis, asthma, and other diseases affecting the lungs.

But it may be considered as exceedingly questionable, whether a simple defect of innervation is the only condition of the nervous apparatus, capable of giving rise to the state of the blood under consideration. There are some circumstances which induce us to think, that the same modification may be induced by a very opposite condition of the brain and nerves. It is a fact worthy of remark, that in many cases of the disease, the brain has been found very much indurated, and diseased in various other ways; that protracted encephalic and nervous disturbance has preceded the development of anæmia, and that a state of extreme hyperæsthesis, or excessive excitement of the cerebral and nervous apparatus, attend the entire career of the malady. It is no doubt true, that this cerebral and nervous excitement must in some cases, be regarded merely as an effect, inasmuch as delirium, and even convulsions, are often induced by excessive losses of blood. But at the same time, the cases of Schwenke, De Haen and some others, to which we have already referred, as well as the case of the maniac, which fell under our own observation, are of a character to constrain us to believe, that the pre-existing disease of the cerebral mass must be regarded as the cause of the anæmic state. If it be inquired, how a state of erethism of the nervous system can tend to produce such a deterioration of the properties of the blood, we would reply, that we often observe analogous effects resulting from causes which are apparently equally paradoxical.

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A stroke of lightning instantly destroys the coagulability of that fluid, by annihilating its vitality; and with a parity of reasoning, we have a right to infer, that a protracted erethism of the nervous system may, in like manner, produce the same effect; the exalted or perverted innervation, under such circumstances, destroying the vital properties of that fluid, and in the same manner that violent inflammation of a tissue often leads to its death or disorganization. The only difference is, that in the one case there is complete extinction of vitality, while in anæmia it is only crippled or impaired. In addition to this, it may be inferred, from what has been remarked relative to the electric phenomena of the blood, that when this state of the cerebral or nervous erethism is developed, the antagonism between the nervous apparatus and the blood itself may be so far impaired, that the former, by obtaining the ascendency, may acquire a positive or *plus* state of electricity, thus leaving the latter in a negative, or *minus* state, with the consequent impairment of its vital properties.

It is only upon the existence of this state of cerebral and nervous erethism that we can explain the general febrile phenomena,—the tumultuous and irregular action of the heart and arteries, the frequent thrilling pulse, the violent pulsation of the large arteries, and the palpitations of the heart,—the hurried and disturbed respiration, the extreme liability to mental emotions from slight causes, the exalted susceptibility of the senses, and of the nervous system generally, the roaring and singing noises in the head,—and above all the frequent cramps, spasms, delirium and convulsions. The erethism of the nerves, seems especially to expend its influence upon the heart and arteries, rendering them so exquisitely irritable or susceptible, that the stimulus of the deteriorated blood excites them to violent and irregular contractions, and thus frequently perpetuates the febrile phenomena, and the frequency and fullness of the pulse, throughout the entire course of the disease.

It may be alleged, that it is difficult to conceive how a state of hyperæsthesis of the whole nervous system can be developed upon such a condition of general prostration of the vital energies. However it may be explained, the fact is incontestible. It is fully illustrated by the effects of excessive losses of blood, to which we have already referred; and it is a frequent condition in many diseases where the powers of the system are enfeebled. In a state of health, there is a regular harmony and accurate antagonism between the activity of the different tissues

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and organs:—they all act in unison. But in disease, it not unfrequently happens that this natural equilibrium is destroyed, that although the powers of life are enfeebled, one tissue may acquire a preternatural degree of activity at the expense of the others, and while their vitalism is depressed, it may acquire increased susceptibilities. This condition has been well illustrated by Giannini, who has distinguished it by the appellation of *neurosthenia.* He characterises it as a state of excessive morbid excitement existing conjointly with debility, and conceives that it is present in the hot stage of intermittent fevers, and other diseases.* The same disturbance of the antagonism of the different parts of the organization is observed in tetanus, in which nearly the whole excitability of the system seems to be concentrated on the muscular and nervous systems, while the susceptibility of the others is for the most part destroyed.

This state of the nervous system is developed by many and various causes. It may have its origin in impressions widely diffused through its ganglionic and other portions, or may originate in a protracted affection of some organ. It has been remarked, that in chlorosis, in which all the phenomena of anæmia are observed, the disease often proceeds from a torpid or inactive state of the ovaria, or genital organs. In this affection, the same erethism or hyperæsthesis of the nervous system is observed, attended with the preternatural mobility to which we have adverted—the irregularity of the action of the heart and arteries, the palpitations, fainting fits, hysteric spasms and convulsions. The reflex influence of this disturbed or perverted action of the nerves upon the nutritive functions, impairs the acts of chylosis and hæmatosis, and anæmia with all its attendant phenomena is developed. But if the torpid organs be roused, by the congenial stimulus of the venereal orgasm, and the nutritive acts be invigorated by appropriate diet and medication, the natural antagonism of the organism will be speedily restored; the extreme mobility of the nervous apparatus will be tranquillized, and health and animation will resume their empire.

Numerous exemplifications of a similar kind might be adduced from the affections of many other organs. This however cannot be necessary, as enough has been said to render it probable, that in most cases of simple anæmia, the mischief is for the most part referrable to either a primary or secondary implication of

*Della natura della Febbri, e del miglior metodo di curarlo, &c. Milano, 1805, cap. iii.

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either the ganglionic or cerebero-spinal nervous systems, or to both; the disturbance of these instruments reflecting its influence upon the functions of nutritive life; impairing their different acts, and finally leading to an extreme impoverishment of the blood, and a depression of the vital energies. There can be but little doubt that the ganglionic nerves are the parts most generally affected; but the hardness of the brain, the disturbance of intellect, the spasms, convulsions, &c. prove that the nervous system of animal life is often profoundly involved.

There is still another consideration which deserves to be mentioned in connection with our subject. Some recent observations of Stevens, Turner, O'Shaughnessy, Clanny and others, seem to prove that the saline materials, and the serum of the blood, play an important part in imparting to it its peculiar color, and affecting other changes which it undergoes in health and disease. How far the characters of the anæmic blood may depend upon the deficiency of saline particles, and the important modifications of the serum which take place, we are not in possession of sufficient data to enable us to decide. But from the results furnished by the experiments of the gentlemen in question,—results which may be regarded as creating a new era for chemical physiology, there can be but little question, that these causes operate in no trifling degree, in inducing the pathological state under consideration.

Anæmia of one or more organs may be induced, moreover, by a defective distribution of blood. This may either depend upon a want of capacity in the vessels supplying them, or the protracted influence of some irritation in a remote point, keeping up the flow of blood in that direction, and thus leaving a part of the organs without an adequate supply. In this case, one set of organs will be in a state of hyperæmia, while those in which the defective determination exists, will be in a bloodless condition. Such an occurrence is by no means rare: it is common in the examination of bodies after death, to find one or more parts completely congested with blood, and others completely anæmic. When the inadequate supply depends upon a want of capacity in the vessels themselves, the fault of the latter may be either congenital or acquired. It is however, more frequently of the latter character. Thus, when a ligature has been applied to the main vessel leading to any part of the body, when such vessel has from any cause become obliterated or preternaturally contracted, and finally, when in consequence of disease of long standing, the minute ramifications of the vessels in the sub-

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stance of the organ become annihilated, or incapable of transmitting their usual quantity of blood, the part from which the proper supply has been cut off by these conditions, will be affected with anæmia to a degree proportionate to the amount of the abstraction.

To these causes may be added long continued discharges by profuse perspirations, diabetes, and diarrhœa. Those, in like manner, who are affected with occasional excess and irregularity of the catamenial discharge, frequently become anæmic; and it should be remarked, that this condition is frequently induced where the mere loss of fluid is altogether too inconsiderable of itself to give rise to such an effect. Such cases have been described by Morgagni and other writers; and Andral has remarked, that in several individuals who had died of chronic diseases, and who had been attacked some time previous to their death with a profuse serous diarrhœa, the only remarkable pathological phenomena that could be discovered, was a complete state of anæmia.

The copious serous effusions which form so common a condition in the disease, is not one of its least singular phenomena. They are not constant, but exist perhaps in a majority of cases in which the anæmia is attended with an extreme watery state of the blood; hence dropsy and anæmia are so closely associated with each other, that it is often difficult to decide which is the cause and which the effect. That the deteriorated and watery state of the blood, attended as it is with a great deficiency of the fibrine or more solid elements of that fluid, often gives rise to dropsical effusions, is proved by common observation; but how it produces this result has not been very satisfactorily explained. Dropsical effusions may take place under very different modifications of the system, but the effusions which are poured out in the anæmic state, seem to be merely a part or a result of the same perversions which implicate the blood from which the fluid escapes. The various causes which have been enumerated, and especially the profound implication of the nervous system, in impairing the acts of hæmatosis and nutrition, not only occasion the pathological states of the blood, but generate a preternatural laxity of the tissues, which two conditions together may be regarded as the foundation of the deposition of the water. In health, when the blood possesses all its proper constituents in a perfect state of integrity, its globules manifest a powerful innate vital attraction for each other, in virtue of which, their proper relations are preserved, so that the whole of that fluid

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represents a mass of moving elements, all united by close affinities, and endowed with strong vital powers. The same is true of the tissues. Formed as they are from the blood, and nourished and replenished by it, their molecules or elements are endowed with a similar faculty of mutual or reciprocal attraction, which brings them together in a certain state of cohesion, the intimacy of which is greater or less, according to the greater or smaller degree of their vital powers. Under the concurrence of circumstances which give rise to anæmia, these properties become modified. In proportion as the blood becomes impoverished, or is deprived of its plastic elements, its vitalism and the attractive force of its molecules are enfeebled,—it is converted into a mere attenuated watery fluid, and as a similar deterioration of the vital powers takes place simultaneously in the solids, by which they are rendered lax and flaccid, the thin watery particles of the blood, which circulate through them, escape with great facility, as it were by a simple act of transudation, there not being sufficient vital cohesiveness to prevent their escape from the vessels, and they either become deposited in the natural cavities of the body, or diffused in the meshes of the cellular tissue. Hence, it is often found, that dropsy is induced independently of any state of previous excitement or inflammation; that it frequently exists where no appreciable lesion can be discovered, and where the only apparent pathological phenomena are, the effusion of the fluid, the watery impoverished state of the blood, and a preternatural laxity or flaccidity of the tissues. The same principle is illustrated by the remarkable tendency of profuse losses of blood to produce dropsy. By these evacuations, similar changes are induced in that fluid, and in the solids, to those which take place in spontaneous anæmia, and precisely the same effects follow. These effusions will be especially apt to occur, when, in addition to the modifications already adverted to, there is superadded the state of neurosthenia by which the circulation is kept in a kind of commotion, as manifested by frequent irregular pulse, palpitations of the heart, disturbed respiration, &c., because under such circumstances, the fluids are circulated with more velocity, and will consequently be more apt to escape.

The production of dropsy from these causes is more frequent than is generally supposed; and as many such cases are attended with fallacious indications of excitement, it is much to be feared, that they are too often erroneously treated. The older physicians possessed more accurate opinions in relation to these forms

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of dropsy, which they denominated atonic, than those of more modern times, and though they did not attribute them to an anæmic state of the blood, they were fully aware of the deteriorated and watery condition of that fluid.

From the foregoing remarks it may be inferred, that the causes capable of producing general anæmia are exceedingly diversified; that the disease takes place under different states of the system; that although in most cases, it is preceded by a long train of phenomena, indicating a gradual and progressive impairment of health, it not unfrequently supervenes suddenly, and in individuals who had presented previously no indications of disease;—that its consequences are variable according to the constitution, temperament, and habits of the individual and the intensity of the malady; and, finally, that whatever its causes, or the manner of its production, except when it arises directly from the abstraction of aliment, the nervous system seems to be directly concerned in its evolution. Innervation is always impaired, and whether this derangement takes place in the ganglionic or cerebro-spinal portions of the nervous system, its influence is extended to the apparatus of nutrition, impairing and perverting its several acts,—interrupting the healthy processes of chylosis, hæmatosis, organic composition and decomposition; depriving the blood of its nutritive or plastic properties; producing analogous effects upon the organic solids, and breaking up the natural harmony of all the complex functions of the animal economy. Local anæmia however, as has been remarked already, may arise from causes less formidable in their operation, and more limited in their influence. It may occur without there being any material impairment of the crasis or general composition of the blood, the disease merely consisting of an absence or paucity of that fluid in the affected organ.

B. *Complex Anæmia.* By this term we wish to distinguish that form of the disease which proceeds from some previous organic affection. Like the preceding variety, it may be either general or local,—or may be either confined to one or more organs, or affect the whole system. It is of much more frequent occurrence than simple anæmia, and, indeed, may be said to exist to a certain extent in nearly all protracted chronic diseases, in which the functions of nutrition experience much disturbance.

As many of the remarks which we have made under the previous head, will apply equally well here, it will be needless to enter into any minute discussions relative to all the pheno-

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mena which attend complex anæmia. Whatever may be the causes by which it is induced, its ultimate effects are the same. Although it may proceed from acute or chronic inflammation of an organ; from a transformation or degeneration of its substance, or from any change or modification in its composition or arrangement, rendering it incompetent to perform its offices in a healthful manner, the effects upon the blood, and through it, upon the entire organization, are indentical with those which are induced when the disease takes place independently of any apparent organic lesion. All the organs, however, are not equally affected by the disease, nor do they all equally dispose to its development. Where the anæmia is local, the parts most frequently affected by it are, the brain, lungs, the substance of the heart, the alimentary canal, liver, spleen, ovaria, and the voluntary muscles. A previous morbid affection of any one of these organs may, in like manner, give rise to general anæmia. The coincidence between this affection and induration of the brain, to which we have already adverted, is somewhat remarkable, and deserves particular consideration. In several of the cases reported by authors, and in some of those to which we have referred in the course of these observations, the diseased state of the brain constituted the principal lesion. In the case of the maniac of which we have spoken as having fallen under our own observation, this organ was anæmic and indurated in a remarkable degree. How such a lesion could affect the properties of blood, and the process of nutrition, can be readily conceived. We have elsewhere remarked,* in speaking of this case, "that perfect hæmatosis exacts a due and regular supply of nervous influence, and that whatever diminishes or cuts off the influence of innervation, diminishes or suspends that process. The texture of the brain therefore, having been altered, and rendered more compact in its arrangement than was consistent with the regular exercise of its functions, and the influence of this derangement being reflected into the system of ganglionic nerves, which preside over and regulate all the molecular compositions and decompositions of our solids and fluids, the natural harmony of these changes was of course disturbed or interrupted; the process of chylification was therefore imperfectly performed; that fluid could not be duly animalized, and was not submitted to those changes by which it is transformed into healthy blood."

* Observations on Asthenia. American Journal, vol. ix. p. 327.

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In proof of the operation of these causes in the production of anæmia, it may besides be remarked, that when a limb has been for some time paralytic, it very generally becomes more or less bloodless and atrophied, showing the agency of a suspension or impairment of innervation in the development of this condition.

As the lungs are regarded as the great laboratory of the blood, it is evident that a diseased state of them will naturally influence more or less the properties and composition of that fluid. They have consequently been considered as exercising an important part in the development of anæmia, and some pathologists have regarded them as mainly concerned in the production of that disease. In phthisis pulmonalis, chronic catarrh, asthma, and many other affections to which they are liable, we not unfrequently find anæmia taking place, while all the other organs retain their healthy characters.

Some diseases of the heart, moreover, such for example, as a softening or atrophy of its substance, dilatation of its walls with attenuation, and in short any lesion tending materially to enfeeble its contractions, and render it incapable of propelling the blood into the extreme periphery of the vascular system, will produce anæmia in those organs, which the blood under such circumstances does not reach in sufficient quantity.

There is perhaps no part of the animal economy, the affections of which more readily induce anæmia, than the mucous membrane of the stomach and intestines. As it constitutes the *fons et origo* of a host of chronic maladies, so do we find on careful examination, that many cases of the disease we are considering may be satisfactorily traced to some morbid process implicating its structure, and modifying its vital acts. It is directly concerned in the process of chylosis; hence the multifarious degrees of chronic inflammation, the numerous transformations and degenerations of its substance to which it is liable, the disturbance it is submitted to from vermination and other causes, tending as they do, to derange the function in question, can scarcely fail to give rise to the anæmic state. We accordingly find it existing in different degrees in nearly all the chronic gastric and intestinal affections of children, and in many of those of adults, in diseases of the mesenteric glands, and especially in the conditions which have been denominated scirrhus and cancer of the stomach.

Anæmia is so often associated with diseases of the liver and spleen, as to be a subject of general remark. The frequency

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of this coincidence seems to favor a hypothesis maintained by many of the ancients, and still advocated by some modern physiologists, that those organs have an important participation in the acts of hæmatosis. There are many considerations which render it highly probable that this is at least a part of their office. Copland suggests, that the liver performs even a more important part in this process than the lungs, and explains in this manner the frequent production of general anæmia by diseases of that organ. Be this as it may, the fact of the frequent connexion between the two affections is incontestible. We have already adverted to the frequent existence of the anæmic state in the poor and wretched population of malarious districts, and in such individuals, enlargement of the liver and spleen, or some other morbid state of those organs, are almost constantly observed. Although it may be true, that in such cases the anæmia may be induced in the manner suggested by Copland, to explain the production of the pathological state of the blood in question, it is not necessary to suppose that the liver is the organ by which hæmatosis is accomplished. It, as well as the spleen forms an eliminating apparatus, by which materials which might prove detrimental, are eliminated from the blood, and ejected from the system. These materials not only reach them through the venous blood which is received directly by the radicles of the vena portarum, but likewise through numerous lymphatics, which open into different parts of this vein, and discharge their contents into it. The probable object of the separate communication of these lymphatics with the veins, is that they may transmit from the lymphatic glands into the venous circulation, any deleterious particles which may be either accidentally introduced into the system, or generated within it, these materials having been previously separated from the nutritive portions of the lymph, by the action of the lymphatic glands.*

While therefore, the liver, spleen, and some other organs, constitute instruments of depuration, it can be readily conceived that any embarrassment of their function, or modification of their texture, capable of interrupting the process of elimination, may, by confining these deleterious principles to the blood, readily induce those alterations of its quantity and quality in which anæmia consists.

Diseases of the kidneys constitute a frequent cause of anæmia

* Geddings on the functions of the lymphatics. Philadelphia Journal, vol. xiv. 1826.

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and other modifications of the blood. The manner in which such effects are produced is not exactly known; but independently of the ordinary influences exercised by disease in general upon the functions of nutrition, and the other acts of the economy, it should be remarked, that one of the offices of the kidneys is to eliminate a peculiar principle called urea from the blood. A disease capable of interrupting or impairing their functions by suspending this process of elimination, may therefore occasion important perversions of the properties of the blood, and of the process of nutrition, in consequence of this material not being separated and thrown off.

Morbid conditions of the ovaria, of the uterus, and of the female organs of generation generally, may be regarded as frequent causes of an anæmic state of the system. These affections are so numerous that it cannot be necessary to consider them separately, or even to enumerate them. The ultimate chain of sympathies which associate the uterine function with that of nutrition, renders it almost impossible for any serious pathological state to involve the one, without exciting considerable disturbance in the other. There is consequently, no set of diseases which more frequently give rise to anæmia than those which affect this organ and its appendages. To this influence we have already had occasion to advert. All the disturbances of menstruation,—all the transformations and degenerations of the uterus and the ovaria, present as their common sequel, a general chlorotic state in which there is the same impoverishment and paucity of blood, the same blanched condition of the tissues, the same state of hyperæsthesis of the brain and nerves, of which we have already spoken, as constituting the most striking characteristics of anæmia. Chlorosis and anæmia are indeed so analogous in their general characters, that in the confirmed degrees of the former, they cannot be distinguished. They are accompanied by precisely the same train of phenomena, and on examination after death, no difference can be perceived in the pathological states which they leave behind. Marshall Hall remarks, that four cases of chlorosis in which sudden death took place, had fallen under his observation. In one of these a careful post mortem examination was made. The patient having been confined to bed a few days with cold, became much better, and was in good spirits; after having sat up for a quarter of an hour, and talked cheerfully, she suddenly became faint, gasped, and expired. Some effusion was found in the ventricles of the brain, in the pericardium, and the left cavity of

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the pleura, the right cavity being obliterated by adhesion; the lungs were gorged with serum; the heart was large; the liver much enlarged; the hands were of an ivory whiteness; the ankles were slightly œdematous, and there was an abundance of adipose substance. The blood was pale and aqueous, and the clots formed in the large vessels were small and light colored.*

These changes are induced by the influence exercised by the uterine system over the various acts of nutrition, by which hæmatosis becomes perverted, the whole constitutional energies prostrated, and a state of general anæmia is induced.

Sec. III. *Treatment of Anæmia.*—The various shades and complications presented by the pathology of the disease, render it difficult to prescribe any general plan of treatment, calculated to meet the exigencies of all cases. This difficulty is still farther increased by the complication of general debility and nervous erethism, which so often exists, and which renders the adaptation of remedies more embarrassing. Besides, it should be remembered, that although in the simple form of the disease, its phenomena cannot be satisfactorily referred to any organic lesion, in complicated anæmia, there is often chronic inflammations of one or more important organs, rendering some modification of treatment requisite.

In prescribing a plan of treatment, all these circumstances must be considered; because the medication which would be appropriate and useful in the simple uncomplicated form of the disease, where there are merely evidences of a general torpor of the organism, might prove highly prejudicial, when that species of excitement exists to which we have adverted as depending upon a state of neurosthenia, or where there is chronic inflammation affecting any of the organs essential to life. In the first form of the malady, a tonic or invigorating course is clearly indicated, and when properly directed, seldom fails to lead to beneficial results. The whole nutritive energies are depressed, and they require to be cautiously but steadfastly invigorated. This must not be attempted by a resort to active excitants, by an immoderate profusion of tonics, or by the injudicious polypharmacy which we too often see called into requisition under such circumstances. A too great anxiety to do much in the treatment of chronic as well as acute diseases, is not only apt to lead to defeat, but unfortunately very often exasperates the malady which we are desirous of removing.

*Art. Chlorosis. Cyclopædia of Pract. Med. Lond.

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The remedies must be carefully graduated to the physiological susceptibility of the organization, and their doses so regulated as not to produce more excitement than is compatible with the natural healthful acts of the tissues. In accordance with these principles, alterative and tonic means should be brought into requisition, while their operation is assisted by a moderately nutritive and analeptic diet. The chalybeate preparations have been found best adapted to this state of the system, and they frequently operate so efficiently, that they have been regarded by some almost in the light of specifics. Any of the preparations of iron may be employed, under the restrictions which have been laid down. We have already remarked, that Hallé employed the prepared filings with the most signal success, in the cases of the miners of Auzain. After having tried various other remedies for several days without success, he resorted to this preparation, administered to the quantity of a drachm in the twenty-four hours, in form of electuary combined with other tonics. In about eight days the veins began to shew themselves beneath the skin of the forearm, the digestion was improved, and the hurried respiration and the palpitations and syncope were mitigated. A progressive improvement was manifested from day to day; the vessels became more and more apparent; a rapid amelioration of all the symptoms took place, and the individuals were finally completely restored to health.*

With the same view all the other preparations of this mineral may be employed; the red and the black oxides,—the carbonate, phosphate, prussiate, tartrate, muriate, acetate, &c. &c. care always being taken not to push the dose beyond that point, which is merely sufficient to invigorate the physiological action of the organs. They may be either given alone or combined with some of the vegetable tonics, as for example, the common vegetable bitters, the preparations of bark, and especially quinine in doses of the fourth or half a grain repeated; the alkalies, iodine, mercury or zinc. Some of these articles are chemically incompatible, and cannot consequently be administered in combination, or simultaneously; yet where this will be impracticable, it will often be advantageous to alternate them. In some cases attended with defective hæmatosis, and a general impairment of nutrition, we have experienced the best effects from the hydriodide of iron. A drachm and a half, or two drachms may be dissolved in a pint of red wine, of which a table spoonful should

* Chomel Dict. de Med. Art. Anemie.

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be given three times a day, or the simple solution in water may be employed in doses of from ten to fifteen drops. The hydriodide of zinc will in all probability be found useful under similar circumstances, as may also the oxide and sulphate of that mineral. The mineral acids have likewise been much employed in the same state of the system, and where there is too much excitement to admit of the ferruginous preparations, quinine, &c. they have been particularly commended by Brandis, Lentin, Richter, and others.

But while these means are instituted, a proper attention must be directed to the secretions and excretions. There is generally considerable torpor of the whole alimentary canal, and of the secretory apparatus engrafted upon it. It is common, therefore, to find the secretions much perverted or even suspended, and the bowels constipated. In some instances the haustri of the colon become completely impacted with indurated fæces, which keep up a perpetual irritation for weeks, without being dislodged from their situation. To obviate or correct these evils, minute alterative doses of mercurials, combined with the extract of jalap, the compound extract of colocynth, a small quantity of aloes, rhubarb or electuary of senna, should be administered from time to time. Free purging should always be avoided, and all that is required in this way is an aperient effect.

Excitants will sometimes be required under the same circumstances, but must always be employed with caution. The best are the sound old wines, or good porter or ale, used in moderate quantities. Many of the physicians of Charleston, So. Car. are familiar with a form of anæmia attended with general dropsy, occurring in slaves who are often sent to the city from the plantations, to undergo medical treatment. It appears to depend upon a deficiency of animal food, and the influence of a malarious atmosphere. We have witnessed many such cases, and have generally found them yield promptly under the use of porter or ale, in which had been dissolved some of the saline diuretics; as the nitrate or acetate of potassa, aided by a generous diet of animal food. How far these salines are beneficial by medicating the blood in the manner represented by Stevens, we are in possession of no data to enable us to decide. But if the deficiency of the salts of that fluid have any agency in the development of anæmia,—an occurrence which, as has been hinted above, is possible, it might be useful to administer such of them as are capable of remedying the defect; as the chlorate of potassa, soda, &c. We are free to confess, that we have no

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experience with this species of medication, nor do we think, until a greater mass of facts shall have accumulated in its behalf, we can repose much confidence in it.

While these means are in progress of administration, the skin must not be neglected. All the aids to be derived from baths, frictions, &c. should be called in requisition, with a view of invigorating the cutaneous function, and thus impressing the organs which are associated with the skin.

These means, together with a nutritious analeptic diet, chalybeate mineral waters, exercise in fine weather, cheerful company, and all the usual means of imparting vigor to the body and mind, may be regarded as comprising the treatment proper to be pursued in the simple uncomplicated forms of anæmia, in which there is no excitement of the nervous or vascular system, or no important affection involving any particular organ.

Where upon the anæmic state, there is the peculiar form of excitement dependent on the neurosthenic condition of the nervous system to which we have so often adverted;—where the brain and nerves are excited; where the circulation is accelerated, and a febrile condition of the system prevails, a very different course will become requisite.—It has already been remarked, that the fallacious appearances of inordinate excitement which frequently attend, are apt to lead the superficial observer to resort to the abstraction of blood, under the impression that the disease is one of active inflammation. This operation should never be employed, as it is always productive of mischievous consequences. The indication to be fulfilled is two fold:—1st, to subdue the preternatural erethism of the nervous system; 2d, to invigorate the nutritive functions, and to impart increased energy to the whole constitution.

The fulfilment of the first part of the indication is the most difficult. It must be attempted by those means which diminish nervous irritation, and by revulsives capable of exciting the physiological antagonism of the other systems. Of the means adapted to the fulfilment of the first of these objects, cold stands pre-eminent. Cold water may be applied to the head, from time to time, in any form that may be agreeable to the patient, either by keeping wet cloths applied, by spunging or sprinkling, or by the douche, or shower bath. While this attention is directed to the head, frictions and sinapisms should be applied to the extremities. The cold may also be applied more extensively, where there are no evidences of local determination. The cold shower bath, or douche, every morning,

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followed by rapid frictions with the flesh brush, and aided in their influence by the simultaneous agency of ferruginous and other tonic preparations, we have seen productive of the most striking benefit. With the addition of alteratives, there is no practice so beneficial in the chronic diseases of children which are complicated with anæmia.

The cold sometimes acts like a charm in quelling the excited and perverted action of the nervous system. We have seen a single application of cold water or ice to the head, or a single shower bath, calm down the cerebral irritation, and reduce the action of the heart and arteries from a state of tumultuous irregular action, almost to that which characterises a tranquil and healthful circulation. The benefits of the application of cold were particularly noted by Dr. Jackson in one of his cases. "The depressing influence of cold to the head," he remarks, "with the repulsive action of sinapisms, blisters and heat to the lower extremities, subdued the cerebral excitement and kept it in check. There was no intermission to the application of cold water to the head for ten days. It was so grateful, the patient would not suffer it to be discontinued."—It must not be concealed, however, that there are cases of febrile anæmia, in which the use of the shower bath, or the application of cold to the entire surface, would be hazardous. This is especially true of that stage of the disease which is verging on effusion. Exposure to cold or moisture under such circumstances, sometimes occasions immediate effusions of water into the cellular tissue and the splanchnic cavities; and in some instances, individuals have been destroyed from this cause, merely in consequence of exposure to a damp chilling atmosphere, during a sudden change of the weather. Cold may, nevertheless, be applied to the head even at this juncture, without any apprehension of mischief.

Revulsives must be employed at the same time. They will be useful in reducing the cerebral and nervous excitement, by exalting the antagonism of the other systems or tissues, and will, besides, be equally demanded in the complicated forms of anæmia, by transferring irritation from the affected organs. They must consist of heat, frictions, rubefacients, sinapisms, and blisters, to which cups may be in many instances advantageously added. Their efficacy will not depend upon the blood abstracted, because there is already a paucity of that fluid, but upon the revulsion which they produce. Hence dry cupping,

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if properly performed, will accomplish all that is desired, so that scarifications may be dispensed with.

Many pathologists and practitioners have recommended the employment of anodynes and antispasmodics, to overcome the excitement of the nervous system. Opium, hyosciamus, lactucarium, musk, camphor, castor, assafœdita, and a train of similar remedies have been proposed, but while we are unwilling to deny that some of them may not be beneficial, we are much disposed to question the propriety of most of them. Those from which we have most reason to expect benefit are, such as possess a soothing or tranquillizing property, without occasioning any inordinate excitement. Whatever is employed should be administered in very minute doses often repeated, and should never be pushed to the extent of producing a strong impression on the nervous system.

When the anæmia presents itself under its complicated forms, and is attended with febrile phenomena, in consequence of the suffering of some organ, these precautions in the administration of excitants will be imperiously demanded. In such cases, the gastro-intestinal mucous membrane often becomes the focus of a train of morbid phenomena, which it is exceedingly difficult to manage. Its susceptibilities seem to be inordinately excited, although there is a general prostration of the energies of the general system;—it takes on the neurosthenic state, which is so conspicuous in the nervous system, and this sometimes even leads to those modifications of nutrition, which are usually the consequence of inflammation, with hyperæmia, or sanguinious determination, although in anæmia there is an absence of all blood in the part, and consequently of all redness. This is the febrile form of anæmia, with *shattered pulse*, to which we have already adverted. We have witnessed a number of cases, and have always found them most formidable, and in a variety of instances fatal in their termination. We had under our care a protracted case presenting this character, in the Baltimore Infirmary, in which the blood was merely a stained water, but the mucous membrane was so exquisitely susceptible, that even corn gruel invariably produced an exasperation of the symptoms. The fever was of malarious origin, and was contracted in the port of Savannah. By repeated cupping and blistering over the epigastrium, and about the vicinity of the head, according as the evidences of erethism were predominant in the one or the other region,—by a regimen consisting almost exclusively of cold barley water or mucilage, occasional altera-

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tives, small doses of castor oil, enemeta, and cold ablutions, a marked mitigation of the symptoms was induced, and the disease was reduced to a distinct paroxysmal form. Under these circumstances quinine could not be employed internally, on account of the great susceptibility of the mucous surfaces; yet it is possible that it might have been advantageously applied to an abraded surface of the skin. This course was not put in execution, on account of our attendance upon the patient ceasing about this time. This method of medication seems to have been beneficial in one of the cases reported by Dr. Jackson, and we should be disposed to try it, with considerable confidence, under similar circumstances. With revulsives, and the other means already proposed, it would promise much benefit, and when the febrile state exists with the complication to which we have alluded, the skin is the only channel by which we can administer tonics and excitants with safety.

Of the treatment of anæmia when it merely exists as a complication of some chronic organic disease, it is needless we should speak. It is, under such circumstances, only a complication of another malady, and as such it must be met by the remedies which are proper for the affection upon which it depends. Generally speaking, alteratives, mineral and vegetable tonics, revulsives, a properly regulated diet, exercise, change of scene, bathing, &c. comprise all the remedies that can be advantageously employed in any case, and as there are scarcely any two examples of the disease exactly alike, the treatment must be varied to suit the conditions of each.

ART. IX. *Reports of Cases in Surgery.* By N. R. SMITH, M. D. Professor of Surgery in the University of Maryland.

AMPUTATION OF THE LOWER JAW.

Case 1. THE case illustrated by the accompanying plate occurred in the person of Mr.—— Etchison, of Frederick county, Md. He first applied to me, at the Baltimore Infirmary, in the summer of 1830, laboring under a carcinomatous affection of the lower lip and gums. An operation for its removal had been previously performed, but as is too frequently the case, the disease had recurred and its usual traits were strongly expressed. I found the diseased parts closely adherent to the jaw, and at once come to the conclusion that the periosteum was involved. The patient being anxious that an operation for its removal should be

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performed, I at once expressed my apprehension that success would not be attained without the removal of some portion of the jaw. The patient, however, was absolutely unwilling to submit to the removal of any portion of the bone; and I therefore determined to make an effort to extirpate the disease by less severe measures. I carefully incised the soft parts sufficiently beyond the border of the disease—carried the incision quite down to the bone, and cleanly dissected the disease from its surface. I of course deemed it necessary to procure an exfoliation of the surface of the bone, I therefore immediately applied the actual cautery.

The patient was then put upon a suitable regimen. The wound soon assumed a healthy aspect—the scale, after a little time exfoliated from the bone, and its surface incarned in a healthy manner. The patient now left the house, and I saw him no more for some four or five months, at the end of which he again presented himself at the Baltimore Infirmary, in a most deplorable condition. The disease had recurred evidently in the cancellated structure of the bone. It had also seized upon the soft parts bordering upon the cicatrix on every side. Along the lower lip it had extended to the left angle of the mouth. On the right, it had extended beyond the symphysis of the chin. The pain which he suffered from it was severe, and characteristic of carcinoma.

The patient, a father of a dependant family, now entreated for further aid, and was willing to purchase a new lease of life with any amount of suffering and peril. I would willingly have avoided to proceed further in this case, but deeming that success was possible by the amputation of the jaw, duty, and the importunities of the patient urged me on. The step was also justified by the counsel of medical friends.

A brief course of preparatory treatment having been instituted, I at length proceeded to execute the amputation of the jaw in the following manner. The incision in the soft part was commenced on the border of the upper lip, about three fourths of an inch from the left angle of the mouth, and was carried with a bold sweep upward, outward, and then downward, so as to include a considerable portion of the cheek. The knife then crossed the jaw opposite to the first molar tooth, descended upon the throat, and then was carried horizontally to the right, half an inch below the margin of the jaw. It then ascended opposite to the bicuspid teeth of the right side, and terminated at the right angle of the mouth, thus including the whole of the

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lower lip, chin, part of the cheek and some of the soft parts of the throat. On the left, the facial artery was immediately cut, and tied at the moment. The muscles connecting the tongue and the os hyoides with the jaw were now divided, and the knife entered the mouth. The submaxillary gland on the left side was included; the sublingual was left, as little disturbed as possible. Branches of the lingual arteries sprung, and were secured with facility at the moment. The rami of the jaw having now been carefully exposed on each side, I passed a narrow spatula beneath the jaw, (first on the left side) and with the common metacarpal saw, effected the section of the bone beyond the second molar tooth. This was then repeated on the opposite side, between the first and second molares, and the removal of the member was effected.

The countenance of the patient now presented truly a frightful appearance, the wound widely expanding, the tongue and fauces exposed. The chasm, however, was much diminished by the use of sutures applied to the lateral angles of the incision, so as to close the parts over the remaining portions of the jaw bone. These also raised the loose integuments of the throat beneath the tongue, and gave to that organ some degree of support and protection. Compresses of lint were now applied and secured by the roller.

The patient suffered little of that distress which in some instances has resulted after this operation, from the retraction of the tongue into the fauces and pharynx. He did, it is true, experience for a time, much difficulty and pain in deglutition, but he in a short time learned to assist this effort in a very important degree by the application of his hand to the dressings beneath the tongue, and thus supporting the organ. He had borne the operation with astonishing fortitude, nor did his resolution yield to the suffering which followed it. Liquid food was conveyed into the fauces by means of a vessel having a long spout. Very little constitutional disorder resulted, union by the first intention took place to a considerable extent, and healthy suppuration in the remainder of the wound.

As the cicatrix formed (and its production was rapid) the extent of the wound was more and more diminished, and by its firmness and adhesion to the tongue, this organ was very effectually supported, and furnished with a point d'appui for its accustomed motions. Deglutition became far more easy. The patient seemed to acquire at length unusual power with the tongue, and used it very effectually in comminuting his food,

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and insalivating it, by pressing it against the roof of his mouth. Before he left the infirmary, indeed, he used to boast of being able to finish his dinner with as much dispatch as any patient in the house.

His speech, even after the operation, was very defective and difficult, but as the cicatrix formed, it greatly improved, and when at length the wound had healed, he articulated with a tolerable degree of distinctness, when he placed his hand beneath his tongue so as to furnish a substitute for the lost lip.

This man left the Infirmary about six weeks after the operation, the cicatrization being then nearly completed, and the parts exhibiting no appearance whatever indicative of returning disease. After an interval of about four months, however, I was shocked at seeing the poor fellow again present himself in a condition as deplorable as ever. The disease had been reproduced in the left angle of the jaw, and had affected the soft parts covering that portion of the bone. It had made, it is true, but slight progress, but its character was sufficiently manifest. My patient again earnestly entreated me to make another effort to rescue him. At first I declined, and endeavored to make him acquainted with the probability of the reproduction of the disease on some part of the face, however completely the present affection might be extirpated. My opinion was founded on the aspect of the skin of the face, and on the symptoms of constitutional disorder present.

It was almost impossible however, to resist his continued importunities. He absolutely insisted upon another resort to the knife, and I again consented to use it. I now removed the angle of the jaw, and with it the diseased soft parts. I found it necessary to carry my incisions deeply into the fauces, and to dissect away diseased membrane as far back as the arches of the palate. The anterior palate half-arch was almost entirely removed, it being completely accessible as soon as the angle of the jaw was taken away.

Our unhappy patient again seemed to be recovering, the wound assuming a perfectly healthy aspect, and being free from any morbid sensation. He again left the house elated with hope, and returned to his employment, that of a turnpike-gate keeper. Many weeks had not elapsed however, before he wrote me that the disease had reappeared in the soft parts near the last cicatrix. I heard nothing more in relation to him till the time of his death, which occurred before many weeks.

If we take into consideration the large portion of the jaw re-

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moved in this case, together with the large portion of the cheek and the diseased parts of the fauces, it will be manifest that few, if any, similar operations have been performed, in which the extent of parts removed was so great, and yet there resulted from the operation no immediate distressing consequences. It is true that no benefit resulted to our unfortunate patient, and I had reason to regret having ever resorted to the knife in his case; but to the profession the case furnishes facts of some interest.

TUMORS OF THE NECK.

Case 1.—The remarks of Allan Burns on tumors of the neck and the practicability of their removal in certain cases, appear to me to inspire the young surgeon with too much dread of resorting to the knife in such instances. The situation of tumors in relation to the fascia of the neck, has, in my opinion, been too much regarded in determining the question of their removal. Mr. Burns perhaps, being the first to demonstrate particularly these expansions, was naturally disposed to make them of as much importance as possible in a practical point of view. From his remarks we should infer, that when a tumor is situated below the deep lamina of the cervical fascia, it can not have continued long and acquired any considerable magnitude, without establishing serious connexions with the important organs of the particular region in which it may chance to be located. This is undoubtedly true with regard to those tumors which speedily impart their peculiar nutritive actions to the surrounding parts; but by no means so in regard to those which are enclosed in cysts. I have often known them to be so forcibly pressed against other organs as to receive the impression of them without establishing any adhesion. I am satisfied from my own experience in the removal of such tumors, that the caution of Mr. Burns relative to their extirpation when they chance to be situated beneath the fascia, is far too strongly expressed.

In the winter of 1830, I visited Mrs. Gilliland, aged about 25 years, the wife of a farmer living near Gettysburg, Pa., for the purpose of examining a large tumor situated in her throat. I found it to be located on the right of the thyroid cartilage, under the border of the sterno-cleido-mastoid, and having the omo-hyoid muscle strained directly across its centre. It was of course completely beneath the deep fascia, and was in immediate contact with the sheath of the great vessels. Its form was ovoidal, its size that of a large goose's egg, and it occupied nearly the whole space from the angle of the jaw to the

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clavicle, creating great deformity. Its long diameter corresponded to the length of the mastoid muscle. It was very firmly bound down by the mastoid muscle and fascia, and was moved with great difficulty beneath them. I first satisfied myself that it was no portion of the thyroid gland. I also convinced myself that it did not involve in disease the great vessels and nerves of the neck. That by its mechanical pressure it irritated these organs was sufficiently manifest, for there existed a train of symptoms evidently resulting from mechanical pressure on the pneumogastric nerve. The stomach was much impaired in its functions, her appetite being capricious, and food often occasioning much distress in the organ soon after being taken. She was also sometimes affected with nausea, diarrhœa, alternating with costiveness. There was also not a little embarrassment of respiration. She suffered severely with occasional pains in the head, on the side corresponding to the disease. The pulse also gave evidence of considerable constitutional irritation.

The tumor had an elastic feel, which caused me to doubt whether it was encysted or sarcomatous. I am not positive as to its duration, but my impression is, that it had been several years in arriving at the magnitude then present.

After a careful examination of the case, in association with my friend Dr. Berluchy of Gettysburg, we decided that the extirpation of the tumor was in all probability practicable, and I expressed a willingness to undertake it; not without much apprehension however, on account of its relations to the deep fascia, blood vessels and nerves. The patient and friends immediately assented to the proposition.

I commenced the operation by incising the integuments and ptatysma muscle along the border of the sterno-cleido mastoid muscle to the whole extent of the tumor. Dividing the fascia of the neck, I encountered the omo-hyoid muscle, drawn like a ribbon obliquely across the tumor. From its extreme tension I found it necessary to divide it, and thus the tumor and its immediate coverings were completely exposed. I then carefully, with the director and knife, divided many layers of cellular tissue which enveloped it, and at length exposed the proper cyst of the diseased mass. This fortunately I found to be but little adherent to the surrounding part. I was enabled indeed to effect its division to a great extent by the use of the handle of the knife alone, occasionally, however, finding it necessary to divide a band of cellular tissue. The tumor had kept itself perfectly distinct from the surrounding parts, which every where pre-

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sented a perfectly healthy appearance. On dissecting it carefully from its bed, I found that it had been so firmly pressed against the great vessels, and against the cartilages of the larynx, that it had received distinct impressions from them. The great vessels were lodged in a furrow on its inner and posterior part, but were separated without any considerable difficulty. I found it necessary to secure no artery until I had removed all its connexions except a small pedicle of vessels which attached it to the deepest part of the wound. These I included in a ligature, and then divided them.

On the removal of the tumor, an immense chasm presented itself in the throat, the cartilages of the larynx were completely exposed, and the great vessels stripped from near the clavicle to the angle of the jaw. I closed the integuments by means of three interrupted sutures assisted by adhesive strips, and brought the parietes of the wound into contact by means of an elastic compress. The tumor presented, on dissection, the medullary sarcomatous character.

The patient necessarily suffered severely during the operation, but I left her soon after in a more comfortable condition than might have been expected. As I subsequently learned from Dr. Berluchy, she recovered rapidly. A great part of the wound healed by the first intention, and the cicatrix formed in such a manner as to cause but little deformity. Those symptoms of gastric disorder and constitutional irritation, which I had supposed to arise from the mechanical pressure of the tumor, totally disappeared. She recovered health and strength, and subsequently became the mother of a vigorous child. She still remains in good health.

Case 2.—Mr. Winrotte, of Littlestown, Pennsylvania, a farmer aged about forty-two, became a patient of the Baltimore Infirmary, in the winter of 1828, on account of a large tumor located upon the side of the throat, and circumstanced almost precisely as the last described. Its form and size were almost precisely the same, and like it, it was covered by the anterior border of the mastoid muscle and by the omo-hyoid. Symptoms extremely like those present in the case of Mrs. Gilliland, were present in this instance. Deglutition, however, was more seriously affected, owing as I thought to the greater degree of power with which the muscles urged the tumor upon the trachea and larynx.

On a careful examination I became satisfied that the removal of the tumor was practicable. My friend, professor Davidge,

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however, was rather averse to such an attempt, and cautioned me in regard to it. The patient was desirous that it should be performed, and I determined to proceed. The operation was executed (in presence of the medical attendants and pupils of the infirmary,) in a manner almost precisely similar to that described in the last case. No blood vessels of any considerable magnitude were divided, and but a single ligature was necessary. Much pain in the region of the wound followed the operation, and great difficulty of deglutition. These, however, subsided after a few hours, and the condition of the patient become comfortable. He left the infirmary in about a week after the operation, the wound having nearly healed. I saw him some six months subsequent to this, and there was then present no appearance of disease whatever. The tumor proved to be the medullary sarcoma.

After the lapse of about a year from the time of the operation, I learned by letter from his medical attendant, that a tumor of forbidding appearance had presented itself in the cicatrix which had resulted from the operation. I was soon after requested to visit him, and to attempt the removal of the disease once more with the knife. But I found the tumor presenting a totally different aspect from that which it was in the previous instance. It was now hard, knotted, closely adherent to the surrounding parts, and excessively painful. I could not by any means withdraw it from its vicinity to the great vessels and nerves, and any attempt to do so caused great pain. I attributed this, however, in some measure, to the adhesions which the cicatrix had caused. He suffered almost constantly, extreme pain in the head, shooting up from the region of the tumor along the course of the great vessels and nerves. There existed a great degree of gastric disorder, and not a little embarrassment of respiration. He was now suffering great constitutional irritation, his strength and flesh were rapidly wasting, and it was manifest that unless speedy relief was rendered, the case must soon come to a fatal conclusion.

I expressed doubt with regard to the practicability of the removal of the tumor, because of its close adhesion to the surrounding parts, and the symptoms indicating involvement of the blood vessels and nerves of the neck. I determined, however, to make an incision upon it—to ascertain its connexions, and then to effect its removal if practicable. Accordingly, in the presence of my friends, Drs. Shorb and Miller, and several of my pupils, I divided the integuments on the inner side of the cica-

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trix, and proceeded to explore its connexions. After cautiously dissecting it from the muscles, and separating its external connexions, I introduced the finger into the wound, and made gentle efforts to detach and separate the tumor from the vessels. While I was in the act of doing this I felt something give way to a gentle effort of the finger, as if some soft substance were ruptured by it, and instantly the wound, the table, and the floor was deluged with dark blood.

I immediately discovered that the internal jugular vein had become involved in the disease, and that its coats, having become soft and brittle, had been largely rent by even the slight traction which had been made upon them. The vessel appeared also to have become enlarged, and, as by the struggles of the patient, the irregularity of breathing, and the action of the heart, the blood was pressed with great force from the cava into the jugular, the hemorrhage was truly appalling. Hemorrhage from the carotid, I am confident could not have been so rapid. It bubbled so copiously from the wound, that in an instant, and before I could press my thumb into the bottom of the cavity, the floor was covered with blood, and the patient fell back inanimate, and as if dying. Respiration and circulation being thus suspended, I was perfectly aware that instant action, before any reaction should occur, was necessary to save our patient from death on the operating table. I opened the wound more freely with the knife. I removed the friable portions of the tumor—I exposed the vein, and found it torn open down close to its junction with the subclavian. I then seized an armed needle which was at hand, and at the moment that the patient was reviving, and that blood began again to gush, I passed a strong ligature beneath the vessel, and secured it close behind the clavicle. This was done with some apprehension, lest I should include the pneumo-gastric nerve. After encircling the vessel, however, I satisfied myself that the nerve was not included, and immediately drew the knot. There was still a good deal of venous hemorrhage from the upper orifice of the wound, and an oozing of arterial blood from the remainder of the diseased medullary mass. It was manifest that the coats of the artery also were involved and converted into the peculiar structure of the disease, and that any further effort upon the latter would at once produce an arterial hemorrhage. I therefore at once closed the wound, and applied to it as the most efficient compress which could be used in that region, a soft sponge. The bleeding immediately ceased, and slight pulse returned in the extremities.

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The patient was carried to his bed, and although he suffered greatly, and was much reduced, immediate dissolution was no longer threatened.

I was obliged to leave my patient, to return to Baltimore soon after the operation, but the conclusion of the case was related to me by Dr. Shorb, of Littlestown. He survived the operation about ten days, and then sunk apparently from exhaustion. It is manifest therefore that he could not have perished from phlebitis, which by some is supposed almost necessarily to arise from the application of ligatures to veins of such very large size, and in a diseased condition.

Another fact is worthy of particular notice. At the moment that blood was gushing most copiously from the wound—when the patient was fainting, and the inspirations were unfrequent, deep and strong, I distinctly heard a bubbling of air as it was sucked into the vein. I apprehended at the moment, that immediate death would be the consequence, but I am not aware that any particular morbid phenomenon resulted from it.

MEDULLARY SARCOMA SUCCESSFULLY TREATED BY LOCAL AND GENERAL REMEDIES.

Case 1.—I use the appellation "medullary sarcoma" as synonomous with fungus hæmatodes, for I believe that but one and the same form of disease is described under these terms, though exhibiting different aspects in different periods of their progress and in different constitutions. This disease is one which I believe is regarded as being but little if at all under the control of local and general remedies; and indeed it is well known, that we are too often foiled in its treatment, even when we resort to the knife. It is not often the case that we have an opportunity to apply our remedies in the incipient stages of the disease, so insidious is it in its progress, and so little apt to excite alarm in the mind of the patient, until it has acquired considerable magnitude. In the case which I am about to relate, I had an opportunity to observe the disease at a very early period, owing to the fact, that a companion of the patient had a short time before died under my care of the same form of disease, with the appearance of which, in its early growth, he was familiar.

The subject of the case was Mr. Wilkinson, a journeyman hatter, living in Front street, Old Town. He was a young man of about 25 years; of correct habits, rather spare, and previously of pretty good health. The first morbid appearance which presented itself in his case, was a small spheroidal tumor, located just below the most prominent part of the malar bone. It had existed some three or four weeks before I saw it, but its

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growth had been slow and it was still small—not larger than a small hickory nut. It was then evidently adherent at one point to the periosteum, although a portion of it projected into the soft substance of the cheek, and by placing one finger within the mouth could be grasped and made to move with some freedom. When thus seized, it had a pulpy feel, though hard around its border. Its summit externally, presented a somewhat livid aspect, and when the finger was pressed upon it, the pulpy elastic feel, so characteristic of medullary fungus, was very manifest.

There had occurred at about the same period, a similar tumor over the centre of the sterno-clavicular articulation adherent apparently to the apparatus of the joint. It presented precisely the same appearance as did the tumor upon the face. Its base was hard, its centre red, and pulpy to the feel. Both tumors were affected with some degree of pain.

The treatment which I first instituted was antiphlogistic. Leeches were applied, cooling lotions and cathartics, low *diet* and repose. No change, however, appeared to take place *in* either of the tumors, except that they slowly increased. That over the sterno-clavicular articulation, appeared to propagate itself along the sterno-cleido mastoid muscle, exhibiting there also, the same indurated base, and the same pulpy consistence in the centre.

I now commenced the administration of the tinct. iodin. in doses of ten drops given thrice a day. At the same time I employed an alterative aperient pill composed of aloes 2 grs. blue mass 2 grs. and ipecacuanha ½ gr. to be taken every night. The local application which I now made was the emplast. hydrarg. with which the tumors were kept constantly covered. This course was persevered in for two or three weeks before I discovered any amendment. I then became satisfied that the hard base of each tumor was diminishing and becoming softer. This I regarded as a favorable indication, because I had observed that the production of the hard substance invariably preceded that of the pulpy, the former appearing to be the necessary nidus of the latter. This improvement continued to gradually progress until at length the hard portions of the diseased structure disappeared. Then, and not till then, the pulpy portion began to be absorbed, and at length all vestige of disease disappeared.

The happy result of this case is in my opinion to be ascribed to the combined agency of *mercury* and *iodine*. I should have remarked, that once or twice, the mercury employed took slight

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effect upon the glandular system, but copious salivation was never produced nor attempted.

Having witnessed the progress of many cases of this formidable disease, and carefully observed their characteristic traits, I have the strongest conviction that the case which I have related, was a well marked instance of the medullary sarcoma, and its result will inspire me with far more confidence in the use of remedies, than authors encourage us to indulge.

I am now pursuing the same course in a similar case, the disease being, however, much further advanced. The remedies have thus far kept it in check, and I do not despair of their bringing it under control. In this instance I have combined a small quantity of iodine with the emplast. hydr.

I ascribe very little importance to the new compounds of iodine and mercury, which ingenious chemists have devised, and so many of which have been employed by Lugol and others. We wish for the action of both mercury and iodine on the system, and this we accomplish by administering the two articles conjointly. Whatever compound of the two we may employ, it is in all probability decomposed and resolved into its elements, or converted into new salts on being received into the stomach. As modifiers of nutrition, I am persuaded that these two articles, especially when associated, are by far more efficient than any other agents of the materia medica. I hope before long to be able to present the results of other cases.

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REVIEWS.

ART. X.—*Lehrbuch von den Brüchen und Verrenkungen der Knochen, Zum Gebrauche für Studirende.* Von DR. ADOLPH LEOPOLD RICHTER, Königl. Preuss. Regimentsarzte des fünften Ulanen-Regiments, u.s.w. Mit acht Kupfertafeln. Berlin, 1833.

Treatise on Fractures and Dislocations. By Dr. A. L. RICHTER, Royal Prussian Physician to the fifth Ulanian Regiment, &c. &c. With eight plates, pp. 448.

ALTHOUGH the branch of surgical science which relates to fractures and dislocations, has been indebted for its improvement more to the English and French, than to the German surgeons, yet the contributions of the latter are by no means unimportant. Whilst the researches of Sir A. Cooper, Sir C. Bell, Amesbury and others in Great Britain, have been directed more particularly to the diagnosis and treatment of fractures in the neighborhood of joints, and those of Dupuytren, Breschet and other eminent pathologists in France, to the investigation of the processes by which injuries of the bones are repaired, their contemporaries in Germany, Hagedorn, Dzondi, Langenbeck, Hager, Kluge, Rust, &c. have labored especially to improve the mechanical means, by which these accidents are treated. In the work before us, the author presents an account of the more important modes of practice in use among his countrymen, but is at the same time disposed to do ample justice to the surgical writers of other nations; those of our own country have not been forgotten, and we find the names of Physick, N. Smith, J. Rhea Barton and others, referred to among his authorities.

The work commences with some general definitions, together with observations on the causes and the diagnosis of fractures. As these are such as occur in every elementary treatise, they of course need no particular notice, and we will merely remark, that Dr. Richter has classed many constitutional affections, such as syphilis, gout, cancer, scrofula, scurvy, and the morbid condition resulting from the abuse of mercury, as causes predis-

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posing to fractures. This opinion has received the sanction of several writers even of recent date, and indeed, there are on record, numerous observations which would indicate a connection in some cases, between cancerous diseases and fragilitas ossium, yet with regard to the other disorders enumerated, it is very doubtful whether the most enlightened pathologists of the present day, would admit the agency here ascribed to them.

After these preliminary remarks, Dr. Richter enters into a full account of the different varieties of fracture, and among them refers to that species in which there is only a partial division of the fibres of a bone. This incomplete fracture has been most frequently observed in spongy bones, and in those of the long bones that are so supported by others in their vicinity, as not to sustain the whole shock of the force inflicting the injury. Sir A. Cooper and Eckl have noticed this kind of fracture in the neck of the thigh bone; Compaignac in the fibula; Chelius has detected it in young subjects by the pain, tumefaction and yielding at the part injured, and his observations correspond with those of our countryman, Dr. J. R. Barton, who in the Medical Recorder for Jan. 1821, has described this affection, as well as the simple *bending* of the bones without loss of continuity, both accidents of course requiring a treatment similar to that of the ordinary complete fracture.

Passing over the sections on the general prognosis of fractures, on the various preparatory measures necessary before commencing the treatment of a case of fracture, such as transporting the patient to his home, or a hospital, the different modes of setting a broken limb, the most appropriate kinds of bedding, with the diversified forms of splints and bandages, on all of which points, the author has given very minute details, we come to the article on the formation of callus. On this interesting subject, Dr. Richter has presented a full and elaborate account of the opinions entertained at various periods by those who have investigated it. His own views do not differ materially from those of Dupuytren and Breschet, which have been confirmed in most respects by the experiments of Meding and Weber of Germany. With regard to the period at which a firm union of a fractured bone may be expected, Dr. Richter agrees with the majority of surgeons, in allowing, when all circumstances are favorable, about ten days for the uniting of a fracture of a finger; for that of a rib, fifteen; for the clavicle, twenty; for the bones of the fore-arm and the fibula, thirty; for the humerus, forty; for the tibia, fifty; and for the femur, sixty or

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seventy days. He also observes that the splints being now removed, the feelings of the patient, and his confidence in the strength of his limb, may generally be consulted with advantage, in judging of the time when it may be put to its ordinary use.

The author next examines the various kinds of injuries that may be combined with fractures, as well as the different morbid affections that may arise during the course of the treatment. His directions for the management of these troublesome, and often dangerous complications, are generally very judicious. He has bestowed a few remarks on *crookedness of the limb* after the healing of a fracture; of this unfortunate result, the causes enumerated, are restlessness of the patient, insufficient support by bandages and splints, and particularly the too early use of the limb. When the curving depends on the want of firmness in the uniting callus, it is of course expedient to re-apply the splints, and to maintain the member in an immoveable position for a sufficient length of time. In a case, in which the patient had exerted himself too soon, and the callus was so altered in form that there was a shortening of the thigh to the extent of two inches, Weinhold succeeded in removing the defect by the introduction of a seton; this was accomplished by means of a small trephine of peculiar construction, and after the lapse of seven weeks, the callus became softened, an extending apparatus was applied, and in the course of six weeks longer, the fractured limb was found to be within a few lines of the same length as the other. In ancient times, a bone which had united so as to form an unseemly angle, was re-broken either by manual force, or by the blow of a hammer. Celsus has detailed the method of accomplishing this object; but most surgeons have rejected the operation altogether, partly because the bone, when the fracture has been healed some time, is less apt to break at the seat of the original injury than at any other place. An attempt has been made recently to revive it, and Oesterlen has brought forward in defence of it his own experience, and that of others; he has also invented a machine for performing it, which if it does not exceed most other surgical apparatuses in usefulness, does at least in length of name, for he has called it *dysmorphosteopalinclastes*. This instrument, a plate of which is given by Dr. R. consists of a frame work having attached to it two firm upright pieces, fastened at the lower end to the limb, by a strap and buckle, one above, the other below the seat of injury, and of a central pad, between the two lateral supports, which is forced

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down upon the projecting angle of the bone, by a strong screw. By this instrument, the bone is re-fractured, and then splints and bandages applied, so as to secure the union in the proper position. There seems little prospect, however, of this barbarous operation ever again becoming common.

The last subject treated of in the general observations on fractures, is that of *false, or artificial joints.* The method of treating this affection, by rubbing together the ends of the bones, a plan recommended by Celsus; the proposition of Avicenna, Guy de Chauliac, and others, of scarifying the fractured surfaces; the practice of White, of sawing them off, and sometimes corroding them with butter of antimony; that of Ollenroth of removing them with nitric acid; that of Cline, Earle, and J. R. Barton, who have used caustic alkali for the same purpose, are all considered less certain and effectual than the seton. This last means of managing false joints, is said to have been first proposed by Winslow, (Tode's Arzneikundigen Annalen, Kopenk. 1787,) but has been brought into notice chiefly through the recommendation of Dr. Physick. Although successful in many cases, it has failed in several in which the more recent plan of treatment by compression, suggested by Amesbury, has resulted favorably. The latter method which is preferred by Dr. Richter, has received the support of many distinguished surgeons, and among others, of Dr. T. H. Wright.*

As the work before us is of an elementary character, we cannot of course follow the author in his observations on all the individual fractures; his account of the diagnosis of each of these accidents is in general very satisfactory; he also presents with regard to each of them, a section on prognosis, which is calculated to be of service to the young surgeon, by enabling him to prepare the patient and his friends in some cases for an imperfect restoration of the functions of the limb. Under the head of treatment, although the methods and apparatuses recommended are occasionally very complicated, yet the author, by giving a fair statement of the modes of practice most approved by the surgeons of different countries, has enabled his reader to make his own selection. We may now notice very briefly one or two of the chapters referring to particular fractures.

In speaking of the treatment of fractures of the olecranon, Dr. R. examines the question, whether an extended or a bent position of the limb be preferrable. The extended position,

* American Journ. of Med. Sciences, Aug. 1828.

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which is recommended by Sir A. Cooper, Amesbury, and many others, enables the surgeon generally to bring the fragments into contact, but it is objected that as in this case the fore-arm can be extended farther back than before the injury, there is some danger of the upper extremity of the broken ulna slipping into the cavity, destined for the olecranon, and of some over-lapping, and an irregular union taking place. Dr. R. also urges as another, and a greater disadvantage of this position, that the patient is obliged either to sit or lie with the limb supported, in consequence of the increase of pain and swelling, that would follow an attempt to walk about with the arm hanging down. Besides, the patient after the healing of the fracture, is apt to have a stiff arm, and finds it sometimes difficult to restore its natural mobility; in this case, a flexed would be more serviceable than an extended limb. On the other hand, Dr. R. thinks that the plan of bending the arm to a right angle, which has been advocated by Manzotti, Camper, Bertrandi, Boyer and Roux, run into the opposite extreme, and increases the space between the olecranon process and shaft of the bone to such an extent, that when union takes place, it is impossible to accomplish a perfect extension of the limb. Duverney, Feiler, Earle, and Sir C. Bell have on this account recommended the limb to be maintained at about the same angle in which it is naturally found, when hanging by the side. Dr. R. prefers this mode, and advises the fore-arm to be placed at an angle of about one hundred and twelve degrees. One reason advanced for adopting this semi-flexed position is, that after the fracture is united, if any stiffness remain, it can be more readily removed by weights and other mechanical means, than if the limb had been kept extended, or in other words, that it will be more easy to extend a bent limb, than to bend a straight one.

On the important subject of fractures of the thigh, the author has presented an interesting summary of the facts and observations recorded by the best writers. His account of fractures of the neck of the bone is perhaps one of the best parts of the work. In the treatment of this injury, he recommends in common with most German surgeons, an extended position of the limb, and prefers to all other apparatuses, that of Dzondi, a modification of Hagedorn's, of which a plate is given in S. Cooper's surgery. The alterations made are not very material; the splint, which in both methods is applied on the outside of the sound limb, Dzondi extends upwards as far as the axilla; he has also placed the foot-board at an obtuse angle with the splint,

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so as to increase the extending force applied to the injured extremity; one of the most useful of his modifications is the application of an additional extending band to the fractured limb; instead of one band alone at the ancle, he adapts a second to the calf of the leg; by using these alternately, the irritation of the integuments at any one point is obviated. He has also among other changes, removed the extending band applied by Hagedorn to the sound foot, as he considers it useless. In addition to this apparatus, Dr. R. recommends the application of Brünninghausen's concave splint to the outside of the fractured thigh, to extend from the crest of the ilium to the knee; this is for the purpose of supporting the trochanter, and of preventing as far as possible, all motion of the bones at the seat of fracture. Of the different contrivances that have been proposed for the purpose of treating this and other fractures of the inferior extremities in the semi-flexed position, Dr. R. gives the preference to that of Amesbury, of which he has presented a description, and a sketch among the plates at the end of the work. An apparatus, however, better adapted to the management of these injuries, and one that is now deservedly popular with the profession in this city, is that contrived by the able and ingenious professor of surgery in the University of Maryland, Dr. N. R. Smith, who has given a plate and description of it in the first number of this journal. One of the important advantages of this apparatus is, that the limb is so suspended as to enable the patient to change his position, without disturbing the fracture, a source of incalculable comfort to the sufferer. The mode in which this is accomplished is far superior to the plan which it appears from Dr. Richter's treatise, has been sometimes resorted to for a similar purpose in Germany, in fractures of the leg.

In the second part of Dr. R's work, the subject of dislocations is fully and methodically considered; many of the chapters are valuable, yet as they are not of such a nature as to admit of analysis, we may here close our notice of the work. It is certainly one of the best upon the subject we have seen, and contains an excellent account of the most recent observations and improvements, drawn from the experience of the surgeons of all countries:—it will be particularly acceptable to the young surgeon. C. J.

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ART. XI. *Elements of Materia Medica and Therapeutics, including the recent discoveries and analyses of Medicines.* By ANTHONY TODD THOMSON, M.D. F.L.S. and G.S. professor of Materia Medica and Therapeutics, and of Medical Jurisprudence in the University of London, member of the Royal College of Physicians, &c. Vol. 1. pp. 747, London, 1832, Vol. 2, pp. 694, London, 1833.

The Dispensary of the United States of America. By GEORGE B. WOOD, M.D. professor of Materia Medica and Pharmacy, in the Philadelphia College of Pharmacy, member of the American Philosophical Society, &c. &c. and FRANKLIN BACHE, M.D. professor of Chemistry in the Philadelphia College of Pharmacy, one of the secretaries of the American Philosophical Society, &c. &c. 2d edition, enlarged and carefully revised. Philad. 1834, pp. 1162.

THE department of medical science, embraced under the appellation materia medica or pharmacologia, has undergone surprising and salutary changes in very recent periods. The repulsive and inert articles, which were at one time admitted into the lists, and gravely sanctioned by the different colleges, or if not by the colleges, by the practice of the leading professors of the healing art, have been generally abolished; caution has been indulged regarding the admission of fresh agents, and the consequence has been, that the mind of the student, and the stomach of the patient are at the present day infinitely less oppressed than they were even at the commencement of the present century. Such at least has been the case in this country, and in Great Britain, but on the continent of Europe we find many things pertinaciously retained in the pharmacopœias, which are the relics of superstition, so old, and so inveterate, that even the present onward march of mind has been insufficient to occasion their rejection. Many of the pharmacopœias of continental Europe afford us special examples of this spirit behind the age. Who would think to find in any of these, and in the 19th century, a distilled water of young swallows, a dried frog, and a human skull powdered; a dried liver of a mad dog, and of a wolf, and many other such irrational agents, not only sanctioned, but recommended by medical faculties for removal of disease.

The pharmacopœias of different countries may in some measure be received as testimony of the relative complexity of the magis-

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tral or extemporaneous formulæ of the practising physicians. If we adopt these as data, the complexity of the formulæ of the French ought to be four times as great as those of the English, and more than three times as great as our own; for the *Codex Medicamentarius* of Paris contains nine hundred simple articles, or thereabouts: the Pharmacopœia of London about two hundred and thirty, and that of the United States about two hundred and eighty.

The same data might enable us to form some inference regarding the confidence reposed in drugs, in the different countries mentioned. Where there are fewer a more rigid scrutiny into the properties of the different articles of the materia medica, it may be presumed, has been exerted; the useless have been rejected, and those only that could be looked upon as efficacious have been retained; but fallacy might exist in deductions of this kind. The materia medica of a country must always be largely composed of indigenous productions; and that country which affords the greatest number of vegetables possessed of medicinal properties will have the largest catalogue of remedial agents. This is the case with our own soil throughout its wide extent: it teems with vegetable productions, and although many of these may possess analogous properties, and several of them be very rarely employed by the practitioner, it is necessary to admit them all into an officinal work. In like manner we might draw the deduction, that the confidence of the physicians of a country in drugs might be somewhat estimated by the quantity of medicines, which they are in the habit of exhibiting; and this, in the same country, and under the same professional regulations, would be a fair ground of inference, but where different professional customs exist no correct deduction can be made from it. For example, in the way in which physic is practised by many in the United States, in the towns especially, there is no great inducement to send in much medicine, inasmuch as the practitioner frequently sends his prescription to the druggist, who prepares it without the prescriber deriving any direct or indirect emolument from it; but in Great Britain it is otherwise. The apothecary, who is the regular medical attendant of the family, prepares his own medicine, and until recently was not permitted to charge for his visits. His remuneration consequently was, and is in a direct ratio with the quantity of medicine he prescribes, and when the physician is called in, as he is aware of this fact, and is often indebted to the apothecary for his being summoned in

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consultation, he prescribes an amount of medicine that will remunerate the apothecary for his attendance. Under this highly objectionable arrangement of the professors of the healing art, the patient is often literally drenched with medicines. Improper articles are not administered, but inert substances and expensive forms of preparation are adopted, simply for the benefit of the attending apothecary. To take an example;—it is the regular custom of the physician-accoucheur, and of course of the apothecary, if he has acted as accoucheur, to send to a female, if able to pay, for the first few days after delivery, six draughts, each of which is charged eighteen pence; and this the female—if in good circumstances—is compelled to take, or at all events to pay for, whether sick or well. These draughts generally consist of some emulsion, often of spermaceti, suspended by means of the yolk of egg, and a few drops of laudanum in each, and are given with the avowed object of allaying the after pains, which, whatever means may be requiredif they be to a violent extent, are necessary to the evacuation of the coagula of blood from the uterus, and therefore ought not to be officiously interfered with.

If the patient be in inferior circumstances, the constituents of those six draughts are embodied into a mixture, that is, instead of being divided into six portions, they are put into one bottle, and the charge on this is three shillings and sixpence, and if she, fortunately for herself, in this respect, is in a still worse situation in life, she enjoys an immunity from all medicine, and, as might be supposed, does equally well as, and perhaps better than, those who are placed above her in the scale of society.

Revolting then, as the admission must be, drugs, in the instance mentioned,—and others might be given as gross and as glaring,—are administered not for the benefit of the patient, but of the pockets of the practitioner. Yet we have known a *conscientious* practitioner so careful that this routine should be kept up as to make his own wife take the six draughts a day in her confinement, in order that it might not seem that he adopted a different system of medication for her, from that which he recommended to his wealthy patients, and accordingly he took care to have not a "beggarly," but a plentiful account of empty bottles on the mantel piece, to make this obvious to the eyes of the lady's visiters.

And this is the state of medicine in one of the most enlightened nations of the world, and at the expiration of the first third of the 19th century! It has arisen, however, from circumstances and innovations that are readily understood. At one time

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the apothecary, in England, was, what he is here, a mere tradesman, occupied in the sale of medicaments, and in the preparation of the prescriptions of the physician. "Medicus præscribit pharmacopola præparat" was then axiomatical; but a change was gradually effected. They, who frequented the shop of the apothecary to purchase drugs, or to have the prescriptions of the physician made up, were occasionally asked regarding the properties of drugs, and their adaptation to disease, and successively they commenced to practise, not only behind the counter, but they visited the sick at their own habitations, and it was not until the evil became urgent that any great opposition was made by the physicians, who had themselves given some cause for the innovation, owing to their neglect in attending to minor cases of disease. A war, characterised by much rancor, then took place between the physicians and the apothecaries, but the usefulness of the latter class of practitioners had become so manifest, that they could not be put down, and they were ultimately erected into a caste, intermediate between the chemist and druggist, and the physician, but partaking of the properties of both, under the title of "*Apothecary*, or *Surgeon Apothecary*, or *General Practitioner*." After the elevation of the apothecary, it became necessary to have his former place supplied, and hence the class of chemists and druggists, as it existed prior to such elevation, was continued, and is so to the present time. The apothecary is enjoined a long period of servitude, protracted study, requires a license to practice, and when this is obtained he commences the practice of his profession, as most physicians do with us, by prescribing in cases of disease, and making up his own prescriptions, but scarcely ever engages in the sale of drugs. He is the regular family physician, or sub-physician—the real physician being called in only in cases of consultation. The apothecary is indeed now, what he was, as defined by Parr, in his Medical Dictionary, nearly thirty years ago, "a preparer of medicines, or, according to the present customs, the most frequent prescriber."

Where such a faulty division of castes prevails, multiple and complex prescriptions cannot always be received as evidence of medical credulity or undue faith in the efficacy of drugs. It is unfortunately to be ascribed to a worse,—a mercenary motive,—which ought not to be permitted to exist for a moment in a calling characterised by so much intrinsic dignity and benevolence.

The author of the "*Elements of Materia Medica and Therapeutics*," the title of which is at the head of this article, has

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been long known as a writer on these departments of medical science, through his "London Dispensatory," which is now in its sixth edition, and which was probably one of the levers that raised him to his present situation, as professor of materia medica and therapeutics in the University of London. The intention of his present volumes, he asserts in his preface, "is to present a condensed view of the branch of medical science of which they treat," an intention which he has accomplished in the goodly number of 1441 pages! This extension has arisen from his desire to incorporate into the work every thing that can be regarded as elucidative of the subject, from the domains of natural history, botany, chemistry, anatomy, physiology, and indeed every department of the science. It is obvious that there may be some advantage in this plan, but if it were pursued throughout, works, professing to be on isolated branches, would cease to be confined to them, and details would be introduced, which would necessarily add largely to the expense of such productions, and which might be found elsewhere; in this way endless repetition would be indulged without any equivalent good. This applies especially to the introduction of matters belonging to the ordinary curriculum of medical studies, as where the author occupies twenty-six pages of his first volume with an account of the "*Chemical Elements of Medicinal Agents,*" topics discussed in every work on chemistry, and taught from every chair on that subject. The very circumstance, indeed, which the author regards as adding value to his "Elements," forms one of the greatest objections to its reception as a text book on materia medica and therapeutics. Independently of other objections, to some of which we shall have occasion to refer, although intended to be "condensed," it is infinitely too diffuse, requiring the student to wade through a mass of matter which forms part of his other studies, and presenting to the educated physician that which is of no practical advantage to him.

Dr. Thomson correctly enumerates the modes in which medicines act on the living body as follows: "1. They may act by a direct impression upon the surface to which they are applied. 2. By an impression upon the nervous energy of the surface to which they are applied, and the effect be extended to the other parts of the system. 3. They may be conveyed by absorption, undecomposed into the system, and influence the habit through the medium of the circulation. 4. They may be decomposed and operate only by one or more of their constituents. 5. They may operate by counter irritation or revulsion."—p. 6.

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He properly discards the exploded notion, which refers the action of all medicinal agents to sympathy; considers the proofs of the fact of absorption in the case of many medicines irrefragable, and successfully combats the idea of professor Chapman, that these agents are decomposed in the stomach; that their components enter the circulation under the influence of the vital energies, which prevents them from recombining; but that as soon as they reach the secretory or excretory organs, they are thrown, as it were, beyond the sphere of those energies, and their chemical affinities being brought into play, they recombine, and the substance is again perceptible, or can be detected by tests in the excretions. Since the promulgation of the striking facts discovered by physiological chemists, as regards endosmose and exosmose—the imbibition and transudation effected through animal tissues—there are but few hardy enough to adhere to so improbable and obscure an hypothesis.

In speaking of the action of medicines that are decomposed in the stomach or after entering the system, the author follows Paris and others in stating, that, besides the decomposition effected on vegetable matters, the acetas potassæ, and some other salts in which vegetable acids enter as components, are liable to undergo the same process; "the acid is digested, whilst the alkali passes into the circulation, and is excreted by the kidneys. Such is the result of the digestive process on many medicines; those parts, which are readily soluble in the gastric juice, are digested; whilst the active principle is set free, remains unaltered, and exerts its influence on the system. In all these and similar instances, the decomposition is effected by the vital powers of the stomach; and the remedial principle of the medicine, which is eliminated, either acts *directly* upon the stomach, extending its influence to distant parts of the system, or it is absorbed, and carried, in the course of the circulation, to those organs on which its appropriate action becomes apparent, whether *diuretic*, *sudorific*, *expectorant*, or otherwise."—p. 20.

As regards the acetate of potassa we cannot comprehend how the decomposition, to which the author refers, can be accomplished. The free acids, that exist in the stomach in a state of health, are known to be the muriatic and the acetic; and if the alkali of the acetate of potassa were set free during digestion, it would be laid hold of by the muriatic acid and enter the circulation as muriate of potassa.

Another of his observations on this head we think objectio-

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ble. We know that when certain vegetable substances are administered, especially in the form of decoction or infusion, the parts which are susceptible of digestion—the mucilage, extractive, &c.—are converted, and the medicinal component is set free so as to exert its appropriate agency. Now, Dr. Thomson thinks, it is to this circumstance, that we may ascribe the time which elapses after taking some medicines, and the period when their operation becomes apparent. "Thus," he says, "if half a drachm of the powder of the root of ipecacuanha be swallowed, from fifteen to thirty minutes generally elapse before vomiting is produced, a circumstance which we may fairly attribute to the envelopment of the emetina—the active constituent of the ipecacuanha—in the *wax*, *gum*, *starch*, and *ligneous matter* of the root; it cannot exert its influence until extracted from these by the process of digestion."

This we do not think is a happy elucidation of the author's position, inasmuch as the same length of time is required for the operation of the emetic, when ipecacuanha is given in forms largely devoid of those vegetable accompaniments, as in the *vinum ipecacuanhæ* of the pharmacopœias, or in the various preparations of its active ingredient *emetine*. Tartarized antimony, too, is as long as ipecacuanha in producing emesis, although it is admirably adapted for rapid absorption, or for instantaneous action on the nerves of the stomach. Observation, indeed, shows, that of emetic agents equally unshackled, and equally adapted, by their ready solubility, for absorption, some produce their effects instantaneously, or at least speedily, whilst others require so long a time for the supervention of their appropriate action, as to induce the belief that they must first of all be absorbed.

Equally unsound, we think are the author's remarks regarding the mode in which the nitrate of silver affects the skin by the means of absorption.

"The nitrate of silver is a salt, composed of oxide of silver and nitric acid; and the only salt of silver which is employed as a medicine. When applied to the moistened surface of the skin, it acts as escharotic; that is, it destroys the life of the part to which it is applied, and forms a chemical union with the animal matter; or, in other words, perhaps more explicit, the affinity of one or more of the components of the nitrate of silver, for one or more of the components of the substance of the body, is greater than the power of the vital principle is capable of withstanding, and therefore they enter into chemical union; a new compound is formed; and the oxide of the decomposed nitrate, entangled, as it were, in the disorganized skin, becomes black. If this salt be largely diluted, and given internally in small doses, or even if it be administered in the solid form, in pills, it produces a powerful tonic effect upon the system; and, in some instances, it leaves a permanent tinge of a

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leaden hue upon the skin. Now, it is evident that this effect could not take place if the nitrate of silver were not taken into the circulation in an undecomposed state; for, if the nitrate were decomposed in the stomach, and converted into muriate of silver, this is an insoluble salt, and, consequently, not fitted to be taken up by the absorbents. But if we admit that the nitrate of silver is taken into the circulation in its undecomposed state, we can readily explain the manner of its decomposition by the capillary vessels of the skin, and its deposition in the rete mucosum, in the state of an insoluble muriate, which would necessarily render any tinge communicated by it to the skin, permanent. That the color is the result of muriate of silver deposited in the rete mucosum, and acted upon by light, is rendered highly probable by observing the action of light upon paper soaked in a solution of muriate of silver. The light changes this muriate, or, more correctly speaking, chloride, from white to a dark violet—a fact easily demonstrated. The muriate deposited in the rete mucosum is changed in color in the same manner; and being insoluble, the color is fixed, remains during life, and causes that leaden hue of the complexion which has unfortunately, in several instances, followed the administration of nitrate of silver. This is not the place to explain the manner in which this change into the muriate takes place in the skin; but the fact is another proof of the assertion, that there are medicines, which, after being taken into the circulation, in an entire state, are decomposed in their progress through it."—v.1 p. 23.

It is difficult to see how the nitrate of silver can *ever* enter the circulation unchanged—that is, in the state of nitrate. It must inevitably be decomposed by the free muriatic acid in the stomach, as well as by the muriate of soda, which is present in the secretions. It is probable that it never enters the circulation in the state of nitrate, but always in that of chloride, which, as Dr. Thomson properly remarks, is always insoluble; but this is not an insuperable obstacle to its absorption. Calomel is equally insoluble, yet we stand in need of no proof that the system is capable of being readily affected by it. The chloride doubtless enters the sanguiferous system, is deposited on the corpus papillare, and, under the influence of light is converted from a white to a dark violet color—an effect which, as Dr. Thomson remarks, can be easily proved by exposing the chloride of silver to light out of the body.

The *modus operandi* of remedial agents by revulsion is decidedly one of the most important, but the least attended to. It is a *general* rule in the animal economy, that two diseased actions do not readily go on at the same time with the like degree of intensity. This has been the subject of remark for ages, and many popular remedies have been suggested by a knowledge of the fact. When any morbid derangement exists in the system, and a new source of irritation is artificially excited, it will often happen, that the new irritation, by attracting the nervous and

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vascular afflux to it, will detract or derive from the internal morbid action, so as to diminish, or wholly remove it. It is in this way, that blisters, and the various counter irritants, issues, setons, moxas, &c. produce beneficial effects, and not by the discharge which they excite.

But these are only the most marked examples of revulsion: it is produced by the action of every local stimulant. It follows the use of cathartics, and is the way in which their chief remedial agency is, in many cases, exerted. In head affections, especially in apoplexy, a revulsion thus effected, is often most salutary, and for this purpose, when deglutition is impracticable, or even when not, powerfully stimulating injections are thrown into the rectum with decided advantage. Sudorifics, diuretics, too, and in short, as we have remarked, all local stimulants owe a part of their efficacy to revulsion. Mercury, one of the most valuable agents we possess, in the treatment of protracted disease, is often employed with no other view. The avowed object of the practitioner is to excite a new action, or, in other words, to produce artificially a fresh pathological condition, which may detract or derive from that which has been long existing.

The third section of the author's first volume investigates the "circumstances, modifying the general action of medicines," and it comprises much interesting matter, although here again we have to object to the introduction of unnecessary topics. For example, in discussing the influence of climate in modifying the action of medicines, he indulges in a detailed account of its effects upon man, with a description of the various races of mankind, all of which may be found in works of physiology and natural history, and of course more appropriately in such works.

In illustrating the influence of the mind over bodily disease, Dr. Thomson refers to a fact, which must have impressed every one much engaged in practice, viz: the extreme difficulty of curing gonorrhœa contracted by married men, and by young men possessed of a high feeling of moral rectitude. The anxiety of such persons to be speedily cured occasions the mind to be constantly directed to the seat of the disease, and more or less erethism is thus induced, which renders the cure difficult. Dr. Thomson thinks, that a vascular fulness of the mucous membrane, and a state resembling chronic inflammation are thus excited, which resist the influence of medicines, that would readily cure the disease in those with whom it is a matter of less anxiety, and little mental reflection. It is obviously of moment, that in all affections, particularly in those of an in-

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flammatory character, the mind should be prevented, as far as practicable, from brooding over the malady, and that every endeavor should be made to withdraw the nervous afflux from the part affected, so far as this can be done with propriety. It is in this way indeed, that revulsive applications exert a portion of their beneficial agency. They not only excite the parts to which they are applied, so as to break in upon the morbid catenation elsewhere existing, but they withdraw the attention, and the nervous afflux from the suffering organ to the part artificially irritated.

The classification of therapeutical agents has always been a matter of difficulty with writers on this subject. Dr. Thomson has devoted upwards of seventy-two pages to the inquiry. The advantages of classification in science are obvious. The relations of articles to each other are in this way collocated, so as to impress the memory, and facilitate the investigations of the students. In no one branch of science, however, is classification available under more difficulties than in therapeutics, if we are desirous, as we ought to be, to establish such classification on the operation of the agents; whilst, on the other hand, nothing is more easy than to form a "natural" classification, founded simply on the three great kingdoms of nature to which they may respectively belong. The classifications of medicines, according to their operation, are most numerous, and at the same time most unsatisfactory. Immense labor, and much valuable time have been spent upon the subject, without any rich fruit. All that are possessed of any activity as vital agents must belong to one of two classes,—*stimulants* or *excitants*, and *sedatives*.

Perhaps the best of all classifications would be one founded upon the agency exerted on the different tissues, but this arrangement, in the present state of science, would be by no means easy, and moreover, the action of medicines, as explained by the therapeutist, is so associated with certain terms employed to denote certain operations which they are esteemed capable of producing, that to abandon them wholly would throw obstacles in the path of the student, without the ultimate advantage accruing to him of possessing a better knowledge of the *modus operandi* of medicines, than when a classification, somewhat resembling those usually embraced, has been adopted. The classification of Barbier, one of the most distinguished of the modern French writers on pharmacology and therapeutics, is founded upon the tissues affected; but it is far from satisfactory, and in consequence of the impracticability he experienced of grouping

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the various articles under appropriate heads, his last unmeaning division is necessarily a large one.

Medicines	which strengthen the tissue of organs,	1. *Tonics.*
	which stimulate the tissue of organs,	2. *Excitants.*
		3. *Diffusibles.*
	which relax the tissue of organs,	4. *Emollients.*
	which moderate the too great activity of organs,	5. *Temperants.*
	which diminish cerebral life,	6. *Narcotics.*
	which irritate the inner surface of the intestines,	7. *Purgatives.*
	which irritate the gastro-duodenal surface especially,	8. *Emetics.*
	which disturb the natural movements of the intestines,	9. *Laxatives.*
	whose modus operandi is not determined, or which cannot be included in the preceding classes,	10. *Incertæ sedis.*

The classification adopted by our author is founded upon the arrangements of Dr. Thomas Young, and Dr. Murray. It is liable to the objections that must apply to all attempts to reduce the multitude of medicinal agents to any thing like a scientific arrangement, as well as to some objections, which apply to it individually. It is as follows:

TABLE OF CLASSIFICATION.

I.—Vital Agents.

A.—Influencing the body generally;

a.—by operating directly on the nervous system;

* *increasing action.* — Excitants.

* * *diminishing action.*
- *Primarily.* — Sedatives. Refrigerants.
- *Secondarily.* — Narcotics. Antispasmodics.

b.—on the muscular and sanguiferous systems:

Tonics.
Astringents.

c.—on the secerning system:

Errhines.
Sialogogues.
Expectorants.
Emetics.
Cathartics.
Diuretics.
Emmenagogues.
Diaphoretics.

B.—Influencing the body solely by their action on the part to which they are applied.

Epispastics.
a. Rubefacients.
b. Vesicants.
c. Actual Cauterants.

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I.—Chemical Agents.

A.—Influencing the state of the body, or its contents, by their chemical properties:

* *acting on the surface.* — Escharotics. *a. Potential Cauterants.*

* * *on the contents of cavities.* — Antacids. Antalkalies. *a. antiseptics.* Antilithics.

III.—Mechanical Agents.

Demulcents. Diluents. v.1, p. 164.

To the three great divisions of Dr. Thomson no valid objection can perhaps be urged; but when we come to consider the different subdivisions, and the ascribed *modus operandi* of many of the classes, we may find much room for difference of sentiment. For example, there does not appear to be any sufficient ground for ranging excitants amongst those agents that operate directly on the nervous system, and tonics amongst those that act on the muscular and sanguiferous systems, nor do we see how *Epispastics* can be regarded as the *only* agents that influence the body solely by their action on the part to which they are applied.

The class of *anthelmintics*, which could not have fallen conveniently under any of Dr. Thomson's sub-divisions—under the view which he probably entertains of the mode in which their therapeutical agency is exerted—has been wholly omitted; and although anthelmintic virtues are assigned to the medicinal agents, which are commonly conceived to possess such virtues, when these agents are referred to under other heads, it is singular, that the class is neither noticed in the table nor in the body of the work. It seems to have altogether escaped Dr. Thomson's attention.

To the classification, which we ourselves prefer, objections may doubtless be urged. We have said, that it is almost impracticable to form any which can be altogether unobjectionable. It has been already remarked, that all agents, capable of affecting the vital tissue, so as to modify its functions effectively, may be classed under the head of *excitants*, or *sedatives*. But in addition to these, what may be called, *vital agents*, we have some other classes of medicines, which, in consequence of their effect being almost purely chemical, without modifying the condition of the living tissue, may be appropriately designated *chemical agents*, and again there is one other class, equally without influence on the vital manifestations, and acting simply

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or chiefly on the mass of humors, which may be properly ranked as *mechanical agents*. The classification which we propose, and which is given beneath, is probably as simple as any that could be adopted, and it is altogether intelligible to the student. It does not enter into questions, connected with the intimate *modus operandi*, which engage the attention of the therapeutist when he enters into the consideration of the different classes, and it embraces some classes not admitted by Dr. Thomson, and yet which comprise some of our most useful medicinal agents. The class of *anthelmintics*, in the sense of—medicines which prevent the generation of entozoa within the body"—is placed next to the class of tonics, as the great predisposent cause of their unusual multiplication is a want of tone of the system generally, and of the stomach in particular; and if we confine our attention to the destruction of these parasites by *true anthelmintics*, or in other words by agents directly destructive to entozoic life, we do but little,—the most important step being to remove the predisposition to fresh generation, precisely as, in the case of intermittent fever, the main object of the practitioner is less directed to the condition of the patient during the paroxysm, than to the prevention of its recurrence.

CLASSIFICATION OF THERAPEUTICAL AGENTS.

- VITAL AGENTS.
  - *Excitants.*
    - increasing action generally or locally or both.
      - Excitants proper.
      - Tonics.
      - Anthelmintics.
      - Astringents.
      - Emetics.
      - Cathartics.
      - Emmenagogues.
      - Abortives.
      - Diaphoretics.
      - Errhines.
      - Sialogogues.
      - Diuretics.
      - Expectorants.
      - Sorbefacients.
      - Revellents.
  - *Sedatives*
    - diminishing action directly or indirectly.
      - Sedatives proper.
      - Narcotics.
      - Antispasmodics.
      - Refrigerants.
      - Nauseants.
      - Demulcents.
- CHEMICAL AGENTS.
  - Antacids.
  - Antalkalies.
  - Antilithics.
  - Disinfectants.
- MECHANICAL AGENTS.
  - Diluents.

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The following remarks on the difference between excitants and tonics are judicious. A wide distinction exists indeed between them, and whilst the former may be extremely objectionable, the latter may be administered in the same cases, if not with advantage, at all events with impunity.

"Excitants, besides differing in their effects according to the part of the system on which their specific impression is made, differ, also, as far as concerns their degree of force or power. The same excitant, also, acts differently according as it is combined with different substances: and different excitants, in different quantities, produce different effects. They differ, also, in the rapidity with which their effects are produced; some being almost instantaneous, others requiring some time; and this altogether independent of the nature of the part to which they are applied. The force or violence of their effects is generally in the ratio of the degree of the rapidity of their action; and the continuance of the impression is, also, in some degree, connected with the same circumstance; since we invariably observe, that the most powerful stimulants, those the action of which is the most rapid, are followed most quickly by a state the opposite of action—that of collapse. It is this result of excitants that distinguishes them from some other medicines which also increase action, and especially tonics; but, if it enable us readily to recognise them in a class so closely allied to them, it increases the difficulty of separating them from another class, that of narcotics, which at first quicken action, but soon afterwards exhaust greatly both sensibility and irritability. On this account we should have a clear conception of what is understood by the term *collapse*.

"It is evident that the expressions *excitement* and *collapse* are merely terms relative to some given standard, or to some point which, in the healthy system, can be considered neither. With respect to excitement, 'if,' to borrow the language of Dr. Cullen, 'we take the lowest, every higher degree than that must be called a degree of excitement: and, if we take the highest degrees, and consider the lower degrees that may take place while life still subsists, every lower may be called a degree of collapse.' As the terms are meant to be employed in these pages, excitement implies every state of the nervous system in which the energy of the brain is greater than that which, in the waking state of a healthy man, is exactly adequate to the ordinary functions of the system; collapse that state in which cerebral energy is so much diminished as to suspend the exercise of the functions of sense and volition; a state of defective activity of the brain, similar to that which causes sleep, only in an augmented degree. There can be no doubt that a certain supply of blood to the brain is essential for the support and continuance of its function: too great an increase of the momentum produces *excitement*; a diminished afflux, on the contrary, within certain limits, or an exhaustion of the moving powers from previous over-exertion, is productive of *collapse*.

"From what has been stated, this fact may be collected—that there is a distinction between what are termed general excitants and those which belong exclusively to this order of our arrangement.

"There is also, as I have already stated a distinction between these and tonics; although this difference is chiefly in degree; but to this distinction I must add, that they differ, also, in the nature of their effects. Excitants increase the mobility of the system; tonics augment the strength of the mus-

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cles: excitants exhaust the excitability; tonics, within a certain limit, maintain it: the action of excitants is immediate, powerful, and transitory; that of tonics is slow, almost imperceptible, and progressive, but permanent. The necessity, therefore, for separating these two classes of medicinal agents must be obvious."—v. 1. p. 176.

The class of sedatives, after the example of Dr. Young, has been judiciously separated, by the author, from that of narcotics. This is, indeed, a well founded distinction, for whilst the latter stimulate in the first instance, and in appropriate doses produce an action of sedation afterwards,—affecting also the brain so as to induce sleep or some degree of stupor, the former *directly* depress the vital forces, without any previous excitation. Such is the case with bloodletting. When the hydrocyanic acid too, is taken, there is no increase in the velocity of the circulation: on the contrary, its force and frequency are both diminished, and this so rapidly, that, in sufficient dose, the animal, experimented on, dies even before it can be removed from the knee of the experimenter.

The sedatives enumerated by Dr. Thomson are:

a. Cyanogen—
Combined with hydrogen, in
Hydrocyanic acid,
Laurel water,
Volatile oil of bitter almonds,
Combined with potassium, in
Cyanide of potassium.

b. Empyreumatic volatile oil—in
Tobacco smoke.

c. Nicotina—contained in the leaves of
Nicotiana *tabacum.*

d. Sulphur—
Combined with hydrogen, in
Sulphurretted hydrogen gas,
Hydrosulphuret of ammonia.

e. Carbon—
Combined with hydrogen, in
Carburetted hydrogen gas,
Combined with oxygen, in
Carbonic acid gas.

f. Bloodletting.

Dr. Thomson's next class—*Refrigerants*—might perhaps with propriety have been included in the one just considered. Although furnishing us with some of our most valuable therapeuti-

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cal agents, especially for the management of fevers, the division has rarely been embraced by therapeutists. The free admission of cool air; the use of iced water—the "*febrifugum magnum*, the topical application of cold by bathing, affusion, ablution; the application of ice, of evaporating lotions, &c. all belong to this class. Amongst these valuable agents we are surprised to see the author place the biborate of soda, and the boracic acid, the latter of which, although at one time termed the "*sedative salt of Homberg*," is unworthy of retention as a refrigerator, and more cannot be said in favor of the former.

It is curious, by the way, to inquire into the mode in which some of the articles of the materia medica, daily prescribed, have gained their reputation as refrigerants. Many of the salts when undergoing solution exhibit a marked refrigeration, and accordingly they were directed to be given immediately after solution, in order that benefit might be derived from the refrigerating or cooling influence, and such was the case with the nitrate of potassa. Paris, indeed, who is a good chemist and occasionally escapes from the thraldom of routine speculation and practice, defines internal refrigerants to be "certain saline substances, which, by undergoing a rapid solution, produce a diminution of the temperature in the stomach and elsewhere."

He consequently adheres to the view, which gave occasion to the adoption of such remedies as refrigerants; but how stands the case with those who are in the constant habit of prescribing such salines as refrigerants? Forgetting the grounds on which they were originally, and ought still to be administered, they frequently direct them to be dissolved, made into a mixture perhaps with other ingredients, and this solution or mixture to be kept in the patient's apartment, and taken at divided doses. In this way the whole refrigerant influence must necessarily be lost, as the mixture acquires the temperature of the apartment; so that independently of the slight laxative influence, which the saline may be capable of exerting, the medicine becomes a mere placebo, on which little or no confidence ought to be reposed. In some instances, indeed, as when the nitrate of potassa, is the saline chosen as the "refrigerant" and administered freely, an excitant effect is produced which may aggravate the disordered action, especially if there be much erethism in the lining membrane of the stomach or duodenum.

Under the head of narcotics, Dr. Thomson properly expatiates on the essential difference in their action, according as

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they are given in a small or a large dose, acting in the former case as a stimulant, in the latter as a sedative.

There is perhaps no class of medicinal agents whose effects are less understood, and none that are more valuable when appropriately administered. The late pathological inquirer, Armstrong, was in the habit of placing the utmost reliance on narcotics in internal inflammation, and especially in peritonitis. He properly exhibited them in large doses, and he has expressed the conviction, that if in such a case he were to be restricted to he lancet or to opium exclusively, he would trust his fate by preference to the latter. Our experience is strongly in favor of the free use of this invaluable drug in similar cases. In this way the sedative influence of the lancet is exerted on the sanguiferous system, whilst the excitability of the nervous system, which so frequently accompanies inflammation, and sustains it by reflection, is allayed by the narcotic. The remarks of Dr. Thomson on this subject are apposite.

"Narcotics induce sleep; but, nevertheless, they cannot be employed for this purpose in cases in which their previous excitement would prove injurious, unless the dose be large enough to induce symptoms of diminished sensibility and action, without any previous increased action; and experience has informed us that this is the result when the dose of a narcotic is sufficiently large. In a practical point of view, the recollection of this fact is of primary importance; since the state of a patient may be either greatly improved, or materially injured, according to the extent of the dose of the narcotic which it may be thought proper to administer. Thus, if we suppose a case of pleurisy, in which the pulse is hard, quick, and forcible, and the pain of the side so acute as almost to prevent a half-inspiration, so that the breathing is short and difficult; if, after a free and copious abstraction of blood, two or more grains of opium, in conjunction with calomel and tartar emetic, be administered, I shall have every reason to anticipate the most beneficial results: but, if half a grain only were ordered, not only would no advantage accrue from the remedy, but, the stimulant effect only of it being obtained, the benefit of the bleeding is likely to be counteracted, and the repetition of the dose would only tend to increase the evil. In this respect the action of narcotics does not differ from that of direct stimulants. A large dose of alcohol, or any ardent spirit, produces depression without any previous perceptible increased action whilst in small doses it stimulates the system, augmenting the vigor of the muscular action, and exalting the nervous energy. In all cases, therefore, of increased excitement, when pain or restlessness demands the administration of a narcotic, the dose should be sufficiently large to obtain, at once, its anodyne effect, without the primary stage of excitement.

"The stimulant effect of narcotics, in small doses, is frequently taken advantage of in the treatment of fevers of a low or typhoid type. The tincture of opium, for example, given in doses of ten minims, at short intervals, increases the strength of the pulse, frequently rouses the vigor of the system, and supports strength more effectually than either wine or any other stimulant." v.1. p. 505.

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Dr. Thomson asserts (v. i. p. 635,) that Dr. Chapman, and following him, Dr. Paris, attempts to prove that bitterness is essential to all tonics; or, in other words, is the tonic principle, but in this he does those writers injustice. The latter gentleman affirms, that the tonics derived from the vegetable kingdom are *generally* bitter, whilst the former expressly says, "concerning the element which gives the tonic power, some difference of opinion has been entertained. Cullen supposed it to be the same quality as that of bitterness. But though it holds to a considerable extent, there would seem to be no necessary connexion in all cases. Exceptions, at least, are not wanting, as we see very strikingly in opium and digitalis, which are bitter, though not tonic; and conversely, in many metallic articles, which, though tonic, are not bitter in the slightest degree."*

Nor do we think Dr. Thomson more accurate in his opinion, "that part of all the vegetable tonics are (is) digested in the stomach, and the principle, whatever it is, which produces their tonic influence, is thus separated from the other parts, and consequently it is enabled to act with more energy upon the nerves of the stomach." This explanation can scarcely apply to infusions of vegetable substances, and still less to the active principles of such substances; nor can it well apply to them when given in the solid form, as in the state of powder,—in which the active principle is combined, in many cases, with little more than lignin or woody fibre. It is but necessary that the fluids of the stomach, or any fluids, should come in contact with the substance, in order that its tonic virtue may be extracted; but nothing like digestion, as applied to the physiological process to which alimentary matters are subjected, is necessary.

Emetics, as is well known, differ greatly in the rapidity of their operation. Whilst some produce emesis soon after they are received into the stomach; others require a considerable time for this result to supervene; and yet these last operate most rapidly if injected into a vein. Hence it has long appeared to us, that whilst there may be certain emetics, which act immediately on the nerves of the stomach, there may be others, which require to enter the circulation and to affect the stomach mediately or indirectly. This view we have long embraced, and inculcated, and it appears to have impressed Dr. Thomson in a similar manner.

* Elements of Therapeutics, v. ii. p. 256.

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"All substances employed to produce vomiting may be ranged under two heads—*direct emetics* and *indirect emetics.*

Direct emetics may be defined 'substances which produce vomiting by an immediate impression on the nerves of the stomach.' It may be asked—how can any direct action upon the stomach produce vomiting, if the stomach be a passive agent in this operation? I reply that, by the term passive agent, I do not mean to assert that the stomach is perfectly inert and insensible to the stimulus of all emetic substances; on the contrary, all irritants, whether chemical or mechanical, are capable of exciting the stomach to vomiting; but, nevertheless, in this operation, the stomach is not the active agent. This seeming inconsistency may be thus explained. When the stomach is in the performance of its natural function, the digested food is pushed forward to the pyloric orifice; but, if the chymification be not complete, it is again thrown back into the fundus; and, occasionally, even into the pharynx, producing eructation—a circumstance, however, which occurs only when the secreted juices of the stomach are in a morbid state; and, under this condition, the ejectment of the food is produced by circumstances resembling in every thing but degree, that produced by emetics. In a similar manner, when a large dose of sulphate of zinc or sulphate of copper, for instance, is swallowed, its immediate application to the nerves of the fundus of the stomach produces a spasmodic contraction, which throws the whole contents of the viscus, mixed with the sulphate, upon the pylorus; but these are as rapidly returned, even before the relaxation, which must follow the spasmodic contraction, have taken place; and by this means the emetic substance, being applied to the nerves of the cardiac portion of the stomach, the muscles and every other part necessary for effecting vomiting are simultaneously called into operation, and vomiting takes place.

"The suddenness with which direct emetics operate is no argument against the truth of this explanation, which I offer as the only theory which, in my opinion, is capable of explaining the immediate influence of sulphate of zinc, sulphate or acetate of copper, carbonate of ammonia, and all other matters which cause immediate vomiting. These substances, when taken into the stomach, first hasten, in a spasmodic degree, that action of the organ which carries the food forward to the pylorus; and there acting, *contra naturam*, instead of opening the pyloric valve, they are thrown back upon the cardiac portion, the nerves of which, being suddenly impressed, call into play all those sympathies which operate to produce the action of vomiting. If this theory be admitted, it may be applied to explain not only the vomitings which powerful irritants produce when swallowed, but those also which occur in cancerous affections of the pylorus, and those which attend the early stages of pregnancy. Thus, in cancer of the pylorus, when food is taken into the stomach, no vomiting occurs until it is pushed forward to the pylorus, which, being morbidly excitable, throws back the food, mixed with acrid matters, the result of the disease, and these, acting on the sensitive extremities of the eighth pair of nerves, which are spread on the cardiac portion of the stomach, the muscles of the abdomen and those of the respiration are instantly called into action to relieve the stomach of the offending matter. During the early stage of pregnancy, again, the sympathy between the stomach and the uterus is such, that the disturbance of the former is in the direct ratio of the energy of the latter; digestion, therefore, becomes depraved; the chyme is imper-

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fectly formed, and, mixed with the acrid secretion, is thrown back from the pylorus and applied to the cardiac nerves, and vomiting is necessarily excited.

The substances which act in the manner just described, scarcely enter the stomach ere they are ejected from it: they constitute *direct emetics.* Their operation is preceded by no nausea, neither is any left behind after it is completed. Emetics of this division, therefore, are adapted for producing full and immediate vomiting in those conditions of the habit in which the exhaustion caused by nausea would be injurious, but in which it is nevertheless necessary to unload the stomach. They are also most useful in cases of poisoning, not only on account of the rapidity of their operation, but from their action not being followed by absorption, which in such cases would prove highly prejudicial.

"2. *Indirect emetics* are substances which enter the circulation previous to vomiting being excited: and, on this account, a certain space of time elapses after they are taken into the stomach before vomiting occurs. It is not easy to explain how their influence is directed to the stomach; but this is the case, even when instead of being swallowed, they are injected into the veins. They consist both of organic products and inorganic substances. Indeed, whatever disturbs the energy of the brain to a degree sufficient to affect the stomach by nervous sympathy, and to call into action the muscles necessary to establish the act of vomiting, may be regarded as an *indirect* emetic. Thus, the mechanical irritation of the uvula and velum of the palate with a feather or the finger; the motion of a carriage; swinging; whirling; sailing; and many narcotics, produce nausea and vomiting: and the same effects result from the inhaling of some gases."

We have already occupied so much space, that we cannot proceed farther. Works of this kind, indeed, do not admit of analysis. "Ex uno disce omnes," might in such cases, be an appropriate motto for the critical analyst. Under each class Dr. Thomson has given the virtues of such agents as he thinks ought to be comprised in them: but many of these are retained, more on the strength of ancient recommendations than of the observations of the author or of his contemporaries. A great fault, indeed, with many of Dr. Thomson's views, connected with particular articles of the materia medica, is, that he does not inquire into the matter sufficiently demonstratively, and that he occasionally exhibits a degree of credulity, which in the present day is scarcely pardonable. The practitioner, who exhibits unbounded faith in his medicinal agents may win the confidence of the patient, but unless his faith is firmly based on rational experience, and directed by sound general principles he cannot win the respect of those, whose good opinions ought to be far more dear to him,—his professional brethren.

It is on account of failings of this kind, and of another character to which allusion has already been made, that the "*Elements of materia medica and therapeutics*" of Dr. Thomson can never

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obtain that extensive circulation, or meet with that valued consideration, which a well arranged and well executed treatise on such a subject will at all times command.

If the work of Dr. Thomson defies analysis, still more must this be the case with the valuable dispensatory of Drs. Wood and Bache, which is necessarily a kind of *catalogue raisonné.* The estimation, in which the work is held by the profession, has been manifested in the most marked and satisfactory manner, by the call for a second edition so soon after the appearance of the first.

The reasons, which suggested the work, in the existence of so many dispensatories, are thus set forward by the authors in their preface.

"The objects of a Dispensatory are to present an account of medicinal substances in the state in which they are brought into the shops, and to teach the modes in which they are prepared for use. The importance of these objects, and the general value and even necessity of a work of this nature, will not be disputed. It may, however, be a question, how far the wants of the medical and pharmaceutical community in this country are supplied by the dispensatories already in circulation; and whether such a deficiency exists as to justify the offer of a new one to the public attention. The great merits of the works severally entitled "The Edinburgh New Dispensatory," and "The London Dispensatory," the former edited by the late Andrew Duncan, M.D., the latter by Anthony Todd Thomson, M.D., are well known wherever the English language is spoken. Founded, as they both are, upon the excellent basis laid by Lewis, they are nevertheless entitled, from the great addition of valuable materials, and the distinctive character exhibited in the arrangement of these materials, to be considered as original works; while the style in which they have been executed speaks strongly in favor of the skill and industry of their authors. But they were calculated especially for the sphere of Great Britain, and are too deficient in all that relates exclusively to this country, to admit of being received as standards here. In the history of our commerce in drugs, and of the nature, growth, and collection of our indigenous medical plants; in the chemical operations of our extensive laboratories; and in the modes of preparing, dispensing, and applying medicines, which have gradually grown into use among us; there is much that is peculiar, a knowledge of which is not to be gained from foreign books, and yet is necessary to the character of an accomplished American pharmaceutist. We have, moreover, a National Pharmacopœia, which requires an explanatory commentary, in order that its precepts may be fully appreciated, and advantageously put into practice. On these accounts it is desirable that there should be a dispensatory of the United States, which, while it embraces whatever is useful in European pharmacy, may accurately represent the art as it exists in this country, and give instruction adapted to our peculiar wants. It appears due to our national character, that such a work should be in good faith an American work, newly prepared in all its parts, and not a mere edition of one of the European Dispensatories, with here and there additions and alterations,

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which, though they may be useful in themselves, cannot be made to harmonise with the other materials so as to give to the whole an appearance of unity, and certainly would not justify the assumption of a new and national title for the book. Whether in the Dispensatories which have been published in the United States, these requisites have been satisfactorily fulfilled, it rests with the public to determine. That valuable treatises on Materia Medica and Pharmacy have been issued in this country, no candid person acquainted with our medical literature, will be disposed to deny. In offering a new work to the medical and pharmaceutical professions, the authors do not wish to be considered as undervaluing the labors of their predecessors. They simply conceive, that the field has not been so fully occupied as to exclude all competition. The pharmacy of continental Europe is ground which has been almost untouched; and much information in relation to the natural history, commerce, and management of our own drugs, has lain ungathered in the possession of individuals, or scattered in separate treatises and periodicals not generally known and read. Since the publication of the last edition of our National Pharmacopœia, no general explanation of its processes has appeared, though required in justice both to that work and to the public. The hope of being able to supply these deficiencies, may, perhaps, be considered a sufficient justification for the present undertaking." p. vi.

The plan pursued by the intelligent authors appears to us unobjectionable, and the mode in which it has been fulfilled entitled to all commendation.

"The Pharmacopœia of the United States," they remark, "has been adopted as the basis of this Dispensatory. It is followed both in its general division of medicines, and its alphabetical arrangement of them under each division. Precedence is, in every instance, given to the names which it recognises; while the explanations by which it fixes the signification of these names, are inserted in immediate connexion with the titles to which they severally belong. Every article which it designates is more or less fully described; and all its processes, after being literally copied, are commented on and explained whenever comment or explanation appeared necessary. Nothing, in fine, has been omitted, which, in the estimation of the authors, could serve to illustrate its meaning, or promote the ends which it was intended to subserve. This course of proceeding appeared to be due to the national character of the Pharmacopœia, and to the important object of establishing, as far as possible, throughout the United States, uniformity both in the nomenclature and preparation of medicines. In one particular, convenience required that the plan of the Pharmacopœia should be departed from. The medicines belonging to the department of Materia Medica, instead of being arranged in two divisions, corresponding with the *Primary* and *Secondary Catalogues* of that work, have been treated indiscriminately in alphabetical succession; and the place which they respectively hold in the Pharmacopœia is indicated by the employment of the term *Secondary*, in connexion with the name of each of the medicines included in the latter catalogue.

"But though precedence has thus been given to the Pharmacopœia of the United States, those of Great Britain have not been neglected. The nomenclature adopted by the different British Colleges, and their formulæ for the preparation of medicines, have been so extensively followed throughout the United States, that a work intended to represent the present state of phar-

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macy in this country would be imperfect without them; and the fact that the writings of British physicians and surgeons, in which their own officinal terms and preparations are exclusively employed and refered to, have an extensive circulation among us, renders some commentary necessary in order to prevent serious mistakes. The Pharmacopœias of London, Edinburgh, and Dublin, have, therefore, been incorporated, in all their essential parts, into the present work. Their officinal titles are uniformly given—always in subordination to those of the United States Pharmacopœia, when they express the same object; but in chief, when, as often happens, no corresponding medicine or preparation is recognised by our national standard. In the latter case, if different names are applied by different British Colleges to the same object, that is generally preferred which is most in accordance with our own system of nomenclature, and the others are given as synonymes. The medicines directed by the British Colleges are all described, and their processes either copied at length, or so far explained as to be intelligible in all essential particulars.

"Besides the medicinal substances recognised as officinal by the Pharmacopœias alluded to, some others have been described, which, either from the lingering remains of former reputation, or from recent reports in their favor, or from their important relation to medicines in general use, appear to have claims upon the attention of the physician and apothecary. Opportunity has, moreover, been taken to introduce incidentally brief accounts of substances used in other countries or in former times, and occasionally noticed in medical books; and that the reader may be able to refer to them when desirous of information, their names have been placed with those of the standard remedies in the Index.

"In the description of each medicine, if derived immediately from the animal, vegetable, or mineral kingdom, the attention of the authors has been directed to its natural history, the place of its growth or production, the method of collecting and preparing it for market, its commercial history, the state in which it reaches us, its sensible properties, its chemical composition and relations, the changes which it undergoes by time and exposure, its accidental or fraudulent adulterations, its medical properties and application, its economical uses, and the pharmaceutical treatment to which it is subjected. If a chemical preparation, the mode and principles of its manufacture are indicated in addition to the other particulars. If a poison, and likely to be accidentally taken, or purposely employed as such, its peculiar toxicological effects, together with the mode of counteracting them, are indicated; the best means of detecting its presence by re-agents are explained.

"The authors have followed the example of Dr. A. T. Thomson, in giving botanical descriptions of the plants from which the medicines treated of are derived. In relation to all indigenous medicinal plants, and those naturalized or cultivated in this country, the advantages of such descriptions are obvious. The physician may often be placed in situations, in which it may be highly important that he should be able to recognise the vegetable which yields a particular medicine; and the apothecary is constantly liable to imposition from the collectors of herbs, unless possessed of the means to distinguish by infallible marks the various products presented to him. A knowledge of foreign medicinal plants, though of less importance, will be found useful in various ways, independently of the gratification afforded by the indulgence of a liberal curiosity in relation to objects so closely connected with our daily pursuits. The introduction of these botanical notices into a Dispensatory

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appears to be peculiarly appropriate, as they are to be considered rather as objects for occasional reference than for regular study or continuous perusal, and therefore coincide with the general design of the work, which is to collect into a convenient form for consultation all that is practically important in relation to medicines. The authors have endeavored to preserve a due proportion between the minuteness of the descriptions, and their value as means of information to the student; and, in pursuance of this plan, have generally dwelt more at length upon our native plants, than upon those of foreign growth: but in all instances in which they have deemed any botanical description necessary, they have taken care to include it in the essential scientific character of the genus and species, with a reference to the position of the plant in the artificial and natural systems of classification; so that a person acquainted with the elements of botany may be able to recognise it when it comes under his observation." p. ix.

To exhibit the mode, in which the authors have executed the task assigned to themselves, we extract the following description of an indigenous article admitted into the Pharmacopœia of the United States.

LIRIODENDRON. U. S. SECONDARY.—*Tulip-tree Bark.*

"Liriodendron tulipifera. Cortex. *The bark.*" *U. S.*

LIRIODENDRON. *Sex. Syst.* Polyandria Polygynia.—*Nat. Ord.* Magnoliaceæ.

Gen. Ch. Calyx three-leaved. *Petals* six. *Samaræ* sublanceolate, one or two-seeded, imbricated in a cone. *Nutall.*

"*Liriodendron tulipifera.* Willd. *Sp. Plant.* ii. 1254; Bigelow, *Am. Med. Bot.* ii. 107; Barton, *Med. Bot.* i. 92. This noble tree is both from its magnitude and beauty the pride and boast of American landscape. Rising on an erect, straight, cylindrical stem, which is often of nearly equal thickness for the distance of forty feet, it attains in favorable situations, an elevation seldom less than fifty and sometimes more than one hundred feet, with a diameter of trunk varying from eighteen inches to three feet; and individuals are occasionally met with which greatly exceed these dimensions. The branches, though not very numerous, are thrown out in a somewhat regular order, and give the tree a symmetrical aspect. The bark of the stem and branches is smooth in the young trees, but in those of older growth is indented with longitudinal cracks or furrows of a depth proportioned to the age. It is of a brown or grayish-brown color, except in the young branches, on which it is blueish or of a reddish tinge. The leaves which stand on long footstalks, are alternate, somewhat fleshy, smooth, of a beautiful shining green color, and divided into three lobes, of which the upper one is truncated and horizontally notched at its summit, so as to present a two-lobed appearance, and the two lower are rounded at the base and usually pointed. In the larger leaves, the lateral lobes have each a tooth-like projection at some distance below their apex. This peculiar form of the leaf serves to distinguish the tree from all others inhabiting the American forests. On isolated trees the flowers are very numerous. They are large, beautifully variegated with different colors, among which the yellow predominates, and in their general appearance bear no inconsiderable resemblance to the tulip, which has given a name to the species. Each flower stands on a distinct terminal peduncle. The calyx is double, the outer being two-leaved and deciduous, the inner consisting of

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three large, oval, concave leaves, of a pale green color. The corolla is composed of six, seven, or more, obtuse concave petals. The stamens are numerous, with short filaments and long linear anthers. The pistils are collected into the form of a cone, the upper part of which is covered with minute stigmas. The fruit consists of numerous long, narrow scales, attached to a common axis, imbricated in a conical form, and containing each two seeds, one or both of which are often abortive.

"The tulip-tree extends from New England to the borders of Florida, but is most abundant and attains the greatest magnitude in the Middle and Western States. It delights in a rich strong soil, and luxuriates in the exhaustless fertility of the banks of the Ohio and its tributary streams. Throughout the United States it is known by the inappropriate name of *poplar*, for which that of *tulip-tree* is beginning to be substituted. When in full bloom, about the middle of May, it presents in its profusion of flowers, its rich, shining, luxuriant foliage, its elevated stature, and elegant outline, one of the most magnificent objects which the vegetable kingdom affords. The interior or heart wood, which is yellowish, of a fine grain, and compact without being heavy, is much employed in the making of furniture, carriages, door-pannels, and for other useful purposes. It is recommended by its property of resisting the influence of atmospheric moisture, and the attacks of worms. The bark is the officinal portion. It is taken for use indiscriminately from the root, trunk, and branches, though that derived from the root is thought to be most active.

"It is brought to the druggists in pieces of various sizes, usually five or six inches long by one or two in breadth, partially deprived of epidermis, of a yellowish-white color, very light, and easily broken. The bark of the root is of a somewhat darker color than that of the stem or branches. It has a feeble, but heavy and rather disagreeable odor, which is stronger in the fresh bark. The taste is bitter, pungent, and aromatic. These properties are weakened by age, and we have found specimens of the bark which have been long kept in the shops, almost insipid. The peculiar properties of the liriodendron appear to reside in a volatile principle, which partially escapes during decoction. This principle has been isolated by Professor Emmett of the University of Virginia, from whom it has received the name of *liriodendrin*. In the pure state it is solid, white, chrystallizable, brittle, insoluble in water, soluble in alcohol and ether, fusible at 180°, volatilizable, and partly decomposed at 270°, of a slightly aromatic odor, and a bitter warm pungent taste. It appears, like camphor, to hold a place between the resins and essential oils. It is incapable of uniting with alkalies, which precipitate it from the infusion or decoction of the bark, by combining with the matter which renders it soluble in the water. Neither does it unite with acids. Water precipitates it from its alcoholic solution. It is obtained by macerating the root in alcohol, boiling the tincture with magnesia till it assumes an olive-green color, then filtering, concentrating by distillation till the liquid becomes turbid, and finally precipitating the liriodendrin by the addition of cold water. (*Journ. of the Phil. Col. of Pharm.* iii. 5.) The virtues of the bark are extracted by water and alcohol, but are injured by long boiling.

"*Medical Properties.* Liriodendron is a stimulant tonic with diaphoretic properties. It has been used as a substitute for Peruvian bark in intermittent fevers, and has proved serviceable in chronic rheumatism, dyspepsia, and other complaints in which a gentle stimulant and tonic impression is desirable.

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The dose of the bark in powder is from half a drachm to two drachms. The infusion and decoction are also used, but are less efficient. They may be prepared in the proportion of an ounce of the bark to a pint of water, and given in the quantity of one or two fluid ounces. The dose of the saturated tincture is a fluid drachm."—p. 407, 408. W.

On the whole, the Dispensatory of Drs. Wood and Bache may be recommended as a safe guide to the physician and *pharmacien* on all the subjects that fall within its province, and we are persuaded it will meet with the extensive patronage it merits. R. D.

ART. XII.—*Medicinisch Praktische darstellung gesammelter Krankheitsfälle und des Heilverfahrens, aus dem Tagebuch meiner Erfahrung*, VON FRANZ STROHMAYER, der Arzneykunde Doctor, mitgliede der Med. Facult. zu Wien. Emeritertem Stadt-Physikus und Ausübenden Arzte in der n. ö. Krieststadt St. Pölten, 8vo. p.p. 235, Wien, 1831.

Practical Exposition of cases of disease and their treatment, extracted from the journal of my experience, by FRANCIS STROHMAYER, M.D. Member of the Medical Faculty of Vienna; Emeritus State Physician, and practitioner at St. Pölten, &c.

IT is much to be regretted, that physicians who are engaged in extensive practice, do not more frequently make it a point to keep a register of their experience. Such a record would not only be of inestimable value to themselves, but in course of time, would become enriched by an assemblage of facts and principles which could not fail to subserve the interests of science and humanity. The occasional collation of the results thus collected in the course of a long experience, would enable the practitioner to correct the errors of his practice, to determine the modifications of disease which occur in various seasons and under different circumstances, and thus to acquire a more accurate knowledge of their pathology, and a better method of treating them. Another inducement to the adoption of this course is, the great liability there is on the part of the physician, in the laborious and almost uninterrupted round of his professional duties, to lose sight of many facts and observations which might prove useful to him at a subsequent period.

The work, the title of which forms the caption of these remarks, is the result of the practice we recommend. Its materials are drawn from the experience of the author during a

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practice of thirty-three years. He informs us, that from the year 1798, at which period he settled as a practising physician at St. Pölten, he kept a regular journal of his cases, in which were also registered the results of his clinical observations, as well as such remarks as he collected, in the course of his professional reading, which were entered in form of excerpts under the title of *collectanea medica.* Such a collection ought of necessity to present many facts of great value, and such a design properly executed and carried out, could scarcely fail to furnish materials of a kind to interest the profession. We accordingly find, that although Dr. Strohmayer has furnished a good deal of matter from his day book, which might have been very well left to repose within its own dusty covers as subjects of his own meditations, he has drawn from it much that is deserving the attention of his professional brethren.

The work is divided into two parts,—the first devoted to acute; the second to chronic diseases. To these are added a collection of miscellanies and an appendix, containing numerous observations and reflections upon a variety of topics. We cannot notice all the diversified materials which he has brought together, but shall be obliged to confine our remarks to a few topics. A more extensive view is indeed not demanded; for although the cases and observations he has detailed, are more or less interesting, as furnishing a regular train of clinical experience, many of them are so common place, that they need not be noticed by us. We shall, therefore, pass over much of the matter contained within the first part of the book, to detail the results of our author's experience in the treatment of dysentery.

This disease, we are informed, prevailed at five different periods as an epidemic, between the years of 1798 and 1816. In 1803, it continued from October to the end of December; in 1807, through the months of October and November; in 1809, from June to the beginning of October; in 1811, from June to the end of September; and in 1816, through the months of August and September.

The epidemic of 1809, presented itself under a very formidable character; many individuals were affected with petechiæ and parotides. It prevailed very extensively and occasioned great affliction and mortality. The disease made its first appearance during fine weather, in the month of June, and was attended with frequent griping and stools, heaviness and pain of the head, disturbance of the digestive organs, and in many instances with vomiting. About the third day, great pain and tenderness

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of the abdomen were experienced, with a painful bearing down at stool, the dejections being for the most part scanty, and composed of mucus tinged with streaks of blood. Sooner or later, according to the strength or age of the individual, a remittent nervous fever declared itself, which at its height was characterized by distinct morning and evening exacerbations; and this complication was the more to be dreaded, as the worst cases presented themselves under this form, and were so obstinate, that the painful dejections often resisted all the means employed to control them. Some of the first cases of the epidemic, especially among the poorer classes, presented gastric, rheumatic or catarrhal symptoms; in a few, inflammatory symptoms were observed, but they soon acquired a nervous character. Those for whom it manifested the strongest predilection, and in whom it presented a character of the greatest violence, were such as were of a weak and nervous temperament, especially children under seven years, and old persons—also females—those of a hypochondriacal, hysterical, gouty and hemorrhoidal temperament:—persons of strong constitution, and in the vigor of life suffered less, and had the disease in a milder form.

The malady was generally characterized by the following symptoms: a small, quick, and oppressed pulse, in some instances twitching of the tendons, extreme prostration, restlessness, vigilance, distress, pungent heat of the skin, incessant tossing of the bed clothes, and jactitation, coldness of the extremities, and clammy sweats. In many cases there were petechiæ—syncope on going to stool; a dry scabrous tongue, black or dark colored about the root, and which was sometimes apparently paralytic,—and indomitable thirst. The countenance was sharp and decomposed; the eyes were dull and lustreless, and were half open, and rolled upwards during sleep—the head, breast, and hands, were covered with a cold clammy sweat; the urine was scanty and turbid; and in mothers who were nursing, the milk totally disappeared about the third day. At the onset of the disease, there were sharp cutting pains of the abdomen, sometimes meteorism,—but towards the close, the pain and sensibility were inconsiderable. The anus was inflamed, red, and frequently presented a spongy gangrenous appearance. The frequent bloody, membranous or flocculent offensive, stools sometimes passed away, without any effort in the advanced stage of the disease; the tormina and tenesmus disappeared; the patient became delirious; the pulse and respiration frequently ceased for some time, and then returned, so

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that there seemed to be a protracted struggle between life and death, until the exhausted powers of nature yielded to the latter.

Under this formidable array of symptoms, those who were affected with the disease generally sunk exhausted. The most unfavorable indications were the frequent bloody dejections; long continued hiccup, an aphthous state of the mouth, and an alternate state of peracousis and deafness. During convalescence, many suffered from organic diseases of the digestive apparatus, atony of the intestines, hemorrhoids, &c. Recovery was generally tedious. Many after much suffering died of marasmus and dropsy. In some the disease was followed by a low form of fever, œdema of the feet and ankles, dropsy, frequent cardialgy, chronic diarrhœa, habitual prolapsus of the anus during sleep, ulceration of this part, &c. The pseudo-membranous productions which were passed by stool sometimes presented a cylindrical form, representing the type of the intestine. They varied in size, however, and sometimes merely consisted of formless membranous flocculi.

Our author remarks that he is convinced near five-sixths, if not the entire population were attacked, if not with the proper dysenteric affection, at least with more or less diarrhœa, manifesting a proclivity to that formidable disease. He subjoins, nevertheless, that although so great a number were, in the short space of five months, attacked either with this violent form of dysentery, or the nervo-gastric fever which accompanied it, the mortality was not very considerable, as the physicians were successful in their treatment.

The following are enumerated by him as the probable causes of the disease:

"1. An epidemic constitution of the atmosphere,—in other words a true dysenteric contagion, which, together with the summer heat of July and August, produced a disturbance of the functions of the liver, and consecutively of the alimentary canal, and occasioned a debilitated state of the solids and a general depression of the whole vital powers.

"2. A too light protection of the body by clothing, against the sudden vicissitudes of temperature, and the cool nights, in consequence of which the functions of the skin were interrupted, and a rheumatic condition was developed, which frequently fell upon the bowels, but which often transferred itself from place to place, the discharges from the bowels being generally suspended when it left those organs.

"3. The influence of fear, and grief; the want of rest; the cares, anxieties, and privations occasioned by the quartering of a band of the enemies' troops in the place, many of whom were affected with dysentery; the necessity under

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which many families were placed of breathing a contaminated unwholesome atmosphere,—all of which tended to give extension to the contagion, during the prevalence of the epidemic.

"4. The existence of a number of hospitals and other houses, which were crowded with patients affected with dysentery and typhus fever, contributed in no trifling degree to the extension of the pestilence.

"5. A very important cause was the use of an unhealthy diet, especially among the poorer classes."—p. 73.

The treatment of the milder cases of the disease consisted for the most part in an attention to cleanliness, a pure air, a separation of the individuals affected, and a properly regulated diet. Where there were evidences of a rheumatic tendency, diaphoretics were found useful; and to relieve the gastric symptoms, emetics of ipecacuanha were administered, which not only removed offending matter from the stomach, but produced a shock upon the nervous system, and promoted healthy secretions. In some cases, the tincture of rhubarb, mucilaginous drinks, infusion of chamomile, with sal ammoniac, &c. were administered, to meet particular indications; and where there were evidences of inflammation, leeches to the anus and abdomen, and calomel were productive of a good effect.

In the more violent grades of the malady, when the discharges were attended with tormina and tenesmus, or when, the pain being inconsiderable, there was great prostration of the vital energies, with a small weak pulse, and a protracted fever of the nervous character, a different course was demanded. To rouse and support the assimilating organs, excitants were administered, consisting under ordinary circumstances of the arnica, calumbo, valerian, simaruba, with stimulants of a fluid character,—æther, spts. nitre, tinct. cort. aurant. and liq. corn. cervi succinatus. Besides these articles, musk, castor, camphor, Dover's powder, extract of hyoscyamus, and what was still better, small doses of opium, were highly beneficial. The opium when administered in large doses, produced too much excitement. When the typhus symptoms were predominant, the elixr. acid. Halleri was combined with these remedies. The bark increased the discharges from the bowels, and added to the sufferings of the patient. Those who were merely affected with a weakness of the digestive organs, used quassia with advantage.

Various external applications were also employed. Soothing mucilaginous injections were thrown into the bowels, consisting of starch, the yolk of eggs, barley mucilage, &c. with the addition in some cases, especially in children, of a small quantity of

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opium. Burgundy pitch plasters were applied to the abdomen, and the same region was frequently rubbed with flannels imbued with æther, camphor, hyoscyamus, oil, &c. Applications of hot dry oatmeal or clay, and warm fomentations of aromatic plants, to which wine was added, were also made to the abdomen. Similar applications were made to the anus, and fumigations of turpentine directed to the same part, were found to prove highly beneficial by diminishing the tenesmus. The excoriations about the anus were relieved by a few drops of the extract of lead, applied to the part. The author remarks, that subsequent experience has taught him, that in obstinate diarrhœa and dysentery, great relief may be often obtained by injections composed of one-fourth or three-fourths of a grain of corosive sublimate, with a grain of opium. Where there was a tendency to relapse, advantage was derived from vesications excited upon the abdomen, either by mezerion or the common blistering plaster.

The diet consisted mostly of light animal broths, rice water, barley water, wine soup, chocolate with or without the yolks of eggs, wine whey, wine lemonade, and where wine even in small quantities could not be borne, emulsion of almonds.

The appearances observed on dissection in those who died in the hospital were, distension of the stomach and intestines with gas; these organs presented a healthy appearance, except towards the lower part of the tube, where the mucous membrane was red and inflamed. The mesenteric glands were enlarged and indurated: the colon and rectum exhibited points in a gangrenous condition, and others in a state of ulceration. Evidences of incipient disorganization were observed in the omentum; the liver was enlarged and very much softened, and the gall bladder full of yellow bile.

We have given the treatment adopted by the author without remark or comment; not that we approve of all the items, but because we had some doubts, after his assurance that it was found highly successful, whether we should be justified in opposing our speculations to his matter of fact. But if the pathology of the disease which he has furnished be considered, we think little question can rest on the minds of the candid and reflecting, that stimulation forms rather too conspicuous a part of his plan of medication, and that local depletion and revulsions were too much neglected. We think we have seen many such cases of dysentery; but we have seen but few in which such active stimulation could have been resorted to without in-

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curring hazardous consequences. The timely abstraction of blood by the lancet, or by leeches and cups; fomentations, sinapisms, warm bath, frictions, emollient drinks and clysters, opium, with or without calomel, &c. have generally controlled the disease before such aggressions were committed upon the organs as to render stimulation necessary.

Scarlatina prevailed at five different periods during the residence of the author at St. Pölten. It varied much in its character; being during some seasons of a slight inflammatory character, but on other occasions presenting symptoms of malignancy, consisting of a typhoid form of fever, low delirium, or coma, great prostration of strength, gangréne of the throat, and a formidable implication of the parotid glands. The cases in which this latter condition existed to a considerable degree, generally had a fatal termination.

The milder cases were successfully combatted by mild antiphlogistic treatment, and some of them required but little assistance from the physician. In those cases, in which the symptoms were somewhat more urgent, leeches were applied; an emetic was frequently given at the commencement, and aperients of the neutral salts, tamarinds, &c. were employed in the course of the disease, as were likewise frequent small doses of tartarized antimony and nitrate of potash.

A different course was demanded in the malignant form of the disease. In some few instances, leeches were applied to the throat, followed by blisters to the neck and the extremities. An emetic was sometimes given at the commencement,—calomel in combination with camphor, &c. and after the occurrence of the nervous stage, valerian, musk, and occasionally blisters were resorted to with advantage. The author seems to think favorably of the cold effusions, as recommended by Currie, but was prevented from employing them. He however found the application of cold to the head, productive of much advantage.

His experience is in favor of the prophylactic virtues of belladonna, but he remarks that it should always be administered in much larger doses than recommended by Hahnemann. One cause of its frequent failure is, that the doses administered are too small to bring the system under its influence, and he observes besides, that the article, when it has been kept for some time, becomes entirely inert. It may also fail from a want of receptivity on the part of the individual to its influence, owing to idiosyncrasy; from the contagion or epidemic influence having seized upon the constitution before it is administered, or from a

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want of proper perseverance in its employment. The dose should be the one-eighth of a grain of the powder daily.

On the subject of *gastric fever*, the author makes some very sensible remarks. He condemns alike the ultra gastricism, which at one time prevailed, and the extravagant notions of Brown, and his followers, who attributed all gastric fevers to the asthenic diathesis. While therefore, he employs emetics under particular circumstances, he is cautious in their administration, and relies more upon mild antiphlogistic means.

"In 1811," he remarks, "a gastric form of fever, complicated with nervous symptoms, prevailed very extensively. It was attended with much tenderness and fulness about the epigastric region, and was treated with mucilaginous drinks, as the decoct. altheæ, with the infusion of arnica, camphor, blisters, fomentations, &c." Some observations are quoted from Bischoff, which furnish a very accurate description of the most prominent traits of this malady. He remarks, that when the upper part of the abdomen, or the umbilical region are forcibly pressed, the individual seldom manifests the slightest pain, but when the pressure is made above the ilium, and carried inwardly towards the lumbar vertebra, a sharp pain is experienced, which is generally attended with a contraction of the muscles of the face, giving rise to a kind of phantastic smile. This pain is fixed, and can be discovered whenever the exploration is repeated. It is one of the most striking characteristics of this inflammation, which is always situated in the cæcum! The plan of treatment proposed by Bischoff is—cupping over the right iliac region, pustulation with tart. emetic ointment, tepid bath, and cataplasms composed of equal parts of linseed meal and mustard flour.

The nervous fever presented itself under several different modifications. These have been described by the author under the denominations of febris nervosa acuta; febris nervosa stupida; febris nervosa versatilis cum erethismo; febris nervosa cum affectione pulmonum et pneumonnorrhagia, and febris lenta nervosa.

In the first variety of the disease, there is more or less disturbance of the nervous system engrafted upon an enfeebled or oppressed organization. At the commencement of the attack, the nervous phenomena are frequently moderate or inconsiderable, but at a later period, they become predominant. Protracted fevers of a different kind often assume this form, but there are a variety of other circumstances, which conspire to induce it, as the depressing influence of grief and care; violent mental emo-

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tions, disappointed hopes and ambition, unrequited affection; nostalgia; inordinate bodily or mental exertion; excessive evacuations; an unwholesome innutritious diet; a confined, damp, impure atmosphere, contagion, an epidemic constitution of the atmosphere, &c. &c.

Amongst other considerations enumerated by the author, which are important to be attended to, he especially indicates the necessity of determining whether the debility which attends the disease is accompanied with a morbid state of irritability, or with great torpor. In the first case excitants must be sparingly used; in the second they will be more strongly indicated, and will be very beneficial.

At the commencement of the disease, when the stomach was oppressed by vitiated secretions, or other materials of an offending character, an emetic was often beneficial, by rousing the nervous system, promoting cutaneous transpiration, and overcoming the dryness and constriction of the surface. The subsequent part of the treatment was confined for the most part to the following remedies, which were varied according to the degree of debility and other modifications of the disease:—valerian, arnica, cloves, angelica, chamomile, liq. cor. cerv. succinat. liquor anodynus, camphor, musk, castor, and in some rare instances phosphorus. The bark was also sometimes administered, as were likewise blisters, yeast, applications of cold water to the head, neck, and temples, and enemata, either with or without assafœtida.

The phosphorus was only given in those cases which indicated great prostration and torpor of the vital powers. It was employed according to the formula of Hufeland:

℞ Phosphori gr. ij.
Subige exacte longa triturationc,
Cum mucilagine gummi arabici q. s.
Ut fiat cum aqua distillata emulsio ʒ v.
Syrupi amygdal. ʒ ss.
M. S. cujus cap. coch. mag. omne ½ hore.

The author details a case of a delicate female, in which notwithstanding all the remedies which have been enumerated, as well as others, were administered, no amelioration ensued, but the disease continued to become more and more formidable, until the symptoms assumed such an alarming character, that it was supposed the patient would not survive an hour. The prostration was extreme, the extremities were cold, and the pulse was small, frequent, fluttering, and scarcely perceptible. At this

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juncture, the phosphorus was employed according to the above prescription, and notwithstanding the almost hopeless condition of the patient, after she had taken the third spoonful, she opened her soporose eyes, took a small quantity of soup, and indicated by her general mien, a considerable improvement in her bodily powers. In a short time, a critical sweat broke forth from the surface; the urine deposited a copious sediment, an efflorescence made its appearance on the neck, and the small, frequent, tremulous pulse gradually gained more power, and by the expiration of twelve days, had nearly acquired its natural force and regularity. The force of the disease was in short broken up, and it was only necessary to direct some attention to the less important indications which arose during the progress of convalescence.

In considering the character of the disease under its different forms, as pourtrayed by the author, and the treatment adopted by him, we cannot refrain from the expression of a doubt relative to the propriety of a part of his therapeutic procedure. Debility seems to have been the bug bear which haunted all his reflections,—it was at the bottom of all his prescriptions, and awed by the semblance of it, he seems to have lost sight, at least to have neglected, some of the most prominent and important features of the disease. He tells us that nearly all those who were bled, or had hemorrhage from the nose, died. Yet that the disease was attended with a formidable implication of the intestinal mucous membrane there can be no doubt, from what he has himself remarked. In detailing the characters of a case at page 129, he observes, that the abdomen was distended and painful on pressure beneath the umbilicus, and copious watery stools flowed from the patient involuntarily. In a foot note he very justly observes, that these symptoms were indicative of an insidious inflammation of the intestines; yet we do not observe that any importance was attached by him to this insidious inflammation; but faithful in his war against debility, camphor, musk and valerian, were the most conspicuous items in his prescription. Fortunately for the patient, the resources of nature were powerful; so that aided by enemata, rubefacients, warm yeast fomentations &c., she triumphed over the difficulties arising from the neglect of proper treatment at the commencement, and brought about a favorable termination. That excitants are often called for in the course of such diseases, there cannot be a doubt. But to confide in them almost exclusively, from the very inception of the malady, we cannot regard

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otherwise than as an injudicious course of procedure, which we feel assured has consigned its thousands and tens of thousands to an untimely grave.

We find nearly the same catalogue of remedies enumerated under the head of what he has denominated putrid fever; but in the treatment of contagious typhus, the author manifests better judgment. Adopting as he has, the views and divisions of the celebrated Hildenbrand, in relation to this form of fever, he predicates his indications more upon the manifestations of local inflammation, which generally attend its progress, and consequently availed himself of the advantages of an antiphlogistic plan of treatment. His remedies were varied to suit the varying character of the malady; but in the first stages, he employed local bleeding by cups and leeches, fomentations, cold effusions and cold sponging, &c., and at later periods, such agents as were called for by the new indications which invited his attention in the progress of the malady. Of the beneficial effects of cold, he speaks in high terms, and he likewise availed himself extensively of the salutary influence of revulsives. He seems to have attached a due importance to the remarks made by Hildenbrand, Richter, Orthost, Hartmann and others,—that the formidable and alarming phenomena, which are so frequently observed in the course of typhus fever, are owing in many instances to a too early resort to stimulating and heating remedies; hence they figure much less conspicuously in his plan of treating this disease than in the management of the several forms of nervous fever. He indeed expressly remarks, that "where stimulating and heating remedies, and active emetics and cathartics were most freely administered in the early stages of the disease, the fever presented its greatest exasperation and intensity, and the prostration of the vital energies, and the fatal termination, were hastened in the same ratio."

Dr. S—— has treated somewhat extensively on the subject of intermittent fever, and has detailed a number of interesting cases in which that disease presented itself under a masked or anomalous form. His observations on the treatment of the disease, though for the most part judicious, are so exactly in accordance with the practice generally pursued, as to render it unnecessary to detail them. In one case, by merely making a strong moral impression upon the nervous system, and the administration of bread pills colored with red sandal wood, he succeeded in arresting an intermittent fever, which had obstinately resisted all treatment during four months.

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The second part of the book is devoted to the consideration of chronic diseases, and contains some useful observations. These we cannot follow out on the present occasion, and shall consequently pass them over to notice some of the materials collected in the third, or miscellaneous department.

We find the following observations on sol-lunar influence.

"The appearance and modifications of the human body, both in health and disease, are more or less under the influence of a diurnal periodicity. The agency of the sun and moon in influencing the living organization was acknowledged by Testa, Medicus, Mead and Wagner, and the importance of solar light in favoring the growth and development, coloration and beauty of both animals and vegetables, is a fact demonstrated by daily experience. Nor is its influence in promoting convalescence less conspicuous, while its absence tends in a remarkable degree to produce an opposite effect. It is indeed highly probable, that many of the changes which take place in the course of diseases, with the progress of day and night, are essentially dependent upon the influence of light.

"Darwin supposed that the type of intermittent fevers is intimately associated with either solar or lunar influence. It has also been remarked by Balfour, that the exacerbations of fever are most violent at the period of the full moon, and that at such times relapses are most frequent. According to the observations of Pinel, many maniacs experience a return of their disease during the month which follows the vernal solstice, which continues through the heat of summer, and again declines with the termination of summer and the declination of the sun. The increase and diminution of the maniacal paroxysm with the rising and setting of the moon, is a matter of common observation.

"I attended a man, aged 37, who for three successive years was attacked with profound melancholy during the hot summer months of July and August. On the fourth year at the same period, he was attacked with furious mania, and afterwards recovered. I have also known many asthmatics to experience a severe paroxysm of their disease, precisely at the period of the full moon, and under such circumstances, medicine has failed to produce the ordinary relief. The case of an individual has been reported by Reil, (*Archiv.* B. I, *Heft.* i. p. 183,) who at every full moon, and at a particular hour of the night, was seized with a violent paroxysm of asthma; and the case of a woman is published in the *Med. Chirurg. Zeit.* B. ii. p. 274, 1810, who at the period of each new and full moon, experienced an attack of convulsive asthma, and these were repeated throughout the year with such regularity, that they almost always recurred at the same hour. This periodical difficulty of respiration is very sensibly influenced by a solar or lunar eclipse; and somnambulists have been observed to be greatly affected by the same cause.

"Many old scrofulous ulcers can only be made to take on the healing process during the increase of the moon, and it has been asserted by Richter, that intestinal worms seem to be sensibly influenced by that planet, and that they can be easier expelled at the period of its full, than at any other time. The influence of the solar light upon certain states of disease is incontestible; as for example in the case of a countess, who always lost the power of speech at the going down of the sun; and the condition described by Vogel, under

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the denomination of *light-hunger*, demonstrates the same thing. It is probable, that the only difference between the influence of the solar and lunar light is referrible to the difference of their intensity." p. 216.

Our author has here broached a subject which has for centuries constituted a fruitful theme of discussion. Of the influence of light in modifying the organization in both health and disease, there can be no question, but that either the sun or moon produce any important effects, independently of those which are owing to the light which emanates from them, we have no satisfactory evidence, nor does such an inference seem to be justified by any of the known phenomena of nature. We are, moreover, much inclined to doubt the adequacy of the causes alleged by the author, to explain all the effects which he has attributed to them.

The following case, exemplifying the extent to which the human system may become accustomed to the operation of arsenic, is interesting, and deserves to be noted. A peasant residing in the vicinity of a convent in the Tyrol, was for a length of time in the habit of taking ten grains of arsenic daily, mixed with his food. The assurances of many of the inmates of the convent leave no doubt of the authenticity of the circumstance.

The enormous extent to which opium can be taken by those who are accustomed to its use is well known. Dr. S. has reported some cases of this kind. He remarks:

"During the Turkish war, I knew a wounded officer who was in the habit of taking two drachms of opium daily, to induce sleep. Bernts, in his medical jurisprudence, has reported the case of a woman affected with a wound in the pubic region, who frequently took two hundred grains of opium in the course of a single day, and who in the course of thirty-three years, used more than two hundred pounds of that article—Schlegel has, likewise published the case of a female, aged forty-nine, who during six or seven years, took daily, from three hundred to three hundred and sixty grains of opium. In the seventh year she died." p. 219.

The author has collected together many other interesting facts, but as we must here bring our analysis of his labors to a close, we shall be compelled to refer to our periscopic department for some of those which deserve most to be recorded. We have already expressed our approbation of the course adopted by Dr. Strohmayer. We should be gratified if others would follow his example. We should have much chaff it is true, but by a thorough process of sifting, some good ripe grain might be extracted. Our author, himself, would have done well to have submitted his materials to a more thorough sifting process, as he would thereby have furnished us the most valu-

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able results of his long experience, divested of much of the mere common place, which he seems to have strung together, for no other object than that of making a goodly sized octavo. As it is, however, his book may be read with advantage, for although his principles are somewhat in the rear of the age, his labors possess the rare merit of being for the most part free of all mere, vague and idle speculations. E. G.

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BIBLIOGRAPHICAL NOTICES.

ART. XIII.—*Sul Commercio Sanguigno tra la Madre e il Feto; Lezione* DE TOMMASO BIANCINI, Prosettore e Ripetitore di Notomia Umananell, I. E. R. Univ. de Pisa, &c. &c. pp. 77, 8vo. Pisa, 1833.

Lecture on the connexion between the blood of the mother and that of the Fetus, by TOMMASO BIANCINI, Demonstrator of Anatomy in the University of Pisa, &c. &c.

No subject within the whole range of anatomical and physiological science, has given origin to more discussion, or constituted a more frequent source of conflicting inferences, than the nature of the connexion between the circulation of the mother and that of the fetus. Nor does the diversity of opinion entertained upon this point, undergo any diminution with the progressive march of science, and the accumulation of facts which is constantly taking place. Within the last two or three years, the discussions upon the subject have been conducted with quite as much warmth, as they were a century ago, and the conclusions formed by the several disputants have been as much at variance with each other. Under these circumstances, any attempt to settle the point at issue, by a direct appeal to experiment, must be hailed with pleasure by every lover of science, and we doubt not our readers will feel as much interest in the memoir of Dr. Biancini, which embodies an immense number of experiments, instituted with this object, as we do ourselves. We have not, indeed, any where seen so great a number of facts collected, calculated to elucidate this difficult part of anatomy, and however much we may have wavered under the conflicting opinions which have hitherto prevailed, we think that the numerous experiments detailed in the very interesting memoir before us, must put all dispute in relation to the direct passage of the blood from the mother to the fetus, forever at rest. We have here no vague and flimsy conjectures—no idle hypotheses, but a series of experiments properly conceived, and faithfully executed—both on the human subject and a diversity of animals. The results too, seem to have been fairly and honestly stated, without the influence or bias of any preconceived opinions, and in that spirit of candor which we can only expect to find in the votary of truth.

Dr. Biancini prefaces his experiments by a brief detail of the labors and opinions of his predecessors. From what has been stated by him, it appears, that so early as 1698, Cowper had published the opinion founded upon his own experiments, that the uterine arteries anastomose directly with the radicles of the umbilical vein, and that the blood of the fetus is transmitted by the umbilical arteries directly into the veins of the uterus. Vieussens affirms, that he saw with his own eyes, mercury which had been injected into the carotid artery of a pregnant bitch, pass into and fill the vessels of the pups contained within the uterus. Humel, Graaf, Lecat, Mery, Vogle, Meckel father, Loder, and others, long since succeeded in propelling fine colored injections, either from the vessels of the mother into those of the fetus; or vice versa,—

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the injections were passed from the umbilical vessels into those of the uterus. Facts of a similar kind have been reported in more modern times, tending to prove the direct continuity of the circulation of the mother into that of the fetus, yet as experiments instituted with the view of settling this question have frequently failed to demonstrate any direct communication between the uterine and placental vessels, a majority of anatomists have denied its existence.

The principal advocates of this latter opinion are, Monro, Rœderer, Ruysch, Mascagni, Schreger, Portal, Stein, Sabatier, Richerand and Magendie, to whom, indeed, might likewise be added nearly all the writers who have treated of this part of anatomy in modern times.

A modification of this opinion was long ago proposed by Wharton, and was afterwards adopted by the two Hunters, and still more recently by J. F. Meckel, Dubois, and many others. According to their hypothesis, the placenta is composed of a uterine and fetal portion, which though intimately united with each other, are so disposed that not a particle of injection can be made to pass from the vessels of the one into those of the other. They assert, that the uterine portion is formed of the uterine vessels and the caduca or decidua—the fetal of the umbilical vessels and the chorion. But while many of them agree as to the placenta being composed of these two portions, they differ materially in relation to the exact manner in which they are connected with each other, and the character of their reciprocal relations. Our author has not entered into any examination of the conflicting opinions which have been offered on this point, and as our observations must be brief, we shall not offer any exposition of them, but proceed directly to a detail of some of the results furnished by Dr. Biancini's experiments.

The subject of the first experiment was a female, who died suddenly during the act of parturition. The vessels of the uterus were injected from the aorta, below the inferior mesenteric artery, with a thin solution of glue deeply colored with vermilion. The parts were carefully examined next day, and the placenta was found still adhering to the fundus of the uterus, with the chorion and amnion running over its surface in the usual manner. Not a particle of the injection was extravasated. The vessels of the umbilical chord, and those of the fetal portion of the placenta, were merely occupied by blood; the minute vessels of the chorion were completely filled with the matter of the injection. They seemed to pass from the greater circumference of the placenta, through which their primitive trunks were seen ramifying and connecting it directly with the uterus. There were, indeed, a number of tortuous branches of about a line in diameter seen, which rising from the uterine arteries, plunged directly into the adjacent substance of the placenta, in which they were lost by their numerous divisions and sub-divisions. The terminations of these vessels were marked by an infinity of small extravasations, which were supposed to represent the cells by which the Hunters affirmed the uterine arteries terminate in the veins of the fetal portion of the placenta.

These facts were satisfactorily observed by all who were present, amongst whom were, Maestri Pietro Betti, Angioli Nespoli, Vincenzi Adreini and Filipo Uecelli, besides many other individuals.

The subject of the fourth experiment was a female who had suffered much during parturition, and who died eight days after delivery. The attempts which had been made to extract the placenta occasioned a profuse and alarming

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hemorrhage which was with difficulty arrested. On opening the abdomen, the uterus was found dilated and flaccid, as though it had been for some time in a state of inertia. A fine injection composed of glue colored with vermilion was thrown into the vessels, and succeeded so well, that not only all the arteries of the uterus, but likewise all the vessels of a considerable portion of the placenta which adhered were beautifully filled with the matter of the injection.

The fifth experiment was performed on the body of a female recently delivered, who had died from profuse hemorrhage. A fine colored injection was thrown into the uterine vessels from the aorta, near where it bifurcates to form the iliacs. The fluid not only filled the arteries, but was likewise partly extravasated into the triangular portion of the cavity of the organ. On searching for the course of this extravasation, it was ascertained that it had not proceeded from any laceration, but from the patulous orifice, of a number of tortuous vessels, which were prolonged for some distance out of the mucous membrane of the organ. These vessels were dispersed upon the whole of the internal surface of the uterus, but were particularly numerous at the point from which the placenta had been detached. They were not mere prolongations of the uterine arteries, but had unlike them thick and strong tunics.—They appeared to be composed of mucus, not yet quite solidified, and were seen to form a free anastomosis with the arteries of the fibrous structure of the uterus. These vessels were supposed by Dr. Biancini, to be of recent formation, and destined to transmit blood from the uterine vessels into those of the placenta. Hence, while he maintains, that they prove the direct continuity of the sanguineous circulation, from the one to the other, he denies that they are mere lymphatics, as represented by Lauth and others, but proper blood vessels, arising from the uterus and terminating in the placenta. He has proposed to denominate them *utero-placental* vessels.

With the view of establishing the same point he performed several similar experiments on cats, rabbits and guinea pigs.

The third experiment was performed upon one of these animals, about seven days after conception, and which had been previously bled to death, by dividing the abdominal aorta. It is somewhat remarkable, that after all the other parts of the body were drained of blood, and deprived of both heat and motility, the uterus maintained its contractility, and the blood continued to circulate through its vessels. Having previously thrown some fine injection into the hypogastric artery, the uterus was carefully examined. It contained five membranous vesicles which were filled with transparent lymph. They adhered to the concave surface of the uterus by a kind of mucilaginous material and a few delicate capillary vessels. These, on a careful examination, were found to be minute ramifications, which had been filled by the matter of the injection. They had their origin from the substance of the uterus, and distributed their delicate ramusculi upon the vesicular membrane.

A similar experiment was performed upon a cat, which had nearly reached the full term of utero-gestation. The animal was killed by dividing the carotid artery, and a fine injection was three hours afterwards thrown into the common iliac arteries. The whole of the uterus as well as the adjacent parts were highly colored by the matter of the injection. On laying open the uterus six small vesicles were found, each containing a dead kitten. Neither vessels or other traces of organization could be discovered in these vesicles, but the fetal face of the placenta was highly colored by the injection, which

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had penetrated those vessels which give origin to the umbilical veins. It is hence incontestible, observes our author, that the injection passed from the uterine arteries into the veins, which appertain to the fetal face of the placenta. He conceives that the infinity of minute vessels which unite the placenta and the uterus, ramify in the former, where they terminate by a complex labyrinth of vascular filaments, which anastomose with the venous radicles of the umbilical vein. Hence through these vessels, the injection in the present case, passed from the arteries of uterus into the radicles of the umbilical vein.

The iliac artery of another rabbit, which had been some weeks pregnant, was injected in the same manner, and the matter of the injection passed readily from the uterine arteries into the radicles of the umbilical veins of four of the young, without there being any evidence of extravasation at any point. A remarkable phenomenon was observed in this case,—the muscles of the lower extremities of the animal, which had been immoveable and to all appearances destitute of life, were thrown into spasmodic contraction by the injection, and these contractions became more and more vigorous in proportion as the materials of the injection were introduced. This contraction was also manifested in the uterus, which acted with so much force, that the expulsion of the young was only prevented by desisting from the injection, and immersing the whole body in cold water. The author attributes this contraction to the influence of galvanic agency, developed by the injection; but the stimulus of the injection alone operating upon the not yet extinct irritability of the animal, would be competent to produce such an effect without the instrumentality of galvanism.

The results obtained in the ninth experiment, which was also performed on a cat, near the term of utero-gestation, were still more satisfactory. It was killed by dividing the carotid artery, and while the heart was still palpitating, a colored injection was thrown from the abdominal aorta into the uterine vessels. These latter were very successfully filled by the injection, even to their minute terminations. When the uterus was laid open, it was found to contain eight kittens, each one invested by its proper amniotic membrane. Each investing membrane presented upon its surface a few serpentine vessels, which took their origin from the uterus;—the placenta presented a bright rose color imparted to it by the injection, and the latter not only filled the uterine vessels proper, but likewise the umbilical vein. On cautiously detaching the placenta, no extravasation of the injection could be discovered, but an immense number of spiral vascular filaments were seen, which arising from the secondary ramifications of the uterine arteries, immediately insinuated themselves into the neighboring portion of the placenta. It was interesting to observe the extreme decomposition or ramifications of these vascular filaments in the midst of the placenta, and the manner in which they again enlarged, as they approached the radicles of the umbilical vein by the union of collateral filaments. Thus enlarged they formed the proper radicles of that vein, which alone of all the vessels of the chord was filled with injection; and what is still more remarkable, the injection extended in six of the kittens, to the portal vein of the liver, and in the two others to the heart, and even to the most conspicuous ramifications of the superior vena cava.

Confirmatory of the same fact, the author states that in 1828, Daliso Casobiana and F. Vinciguerra, students of medicine of the university of Pisa, performed a series of experiments on the gravid uteri of guinea pigs, with

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the view of determining the manner in which the blood passes from the mother to the fetus. They employed mercurial injection for this purpose, and had the satisfaction to find that the quicksilver passed from the uterine arteries into the umbilical vein, which it traversed as far as the portal veins, and in some instances reached the inferior vena cava. A similar experiment was also made by Dr. Biancini himself. The uterine arteries of a pregnant guinea pig, were injected with quicksilver while the animal was yet alive.—The uterus contained three well developed young. The mercury had filled the placental vessels of two of them, and in the third had besides, traversed both the umbilical vein and the two umbilical arteries. This preparation, which he informs us is still in his possession, shows the injection passing from the uterine arteries into the umbilical vein through the anastomosis, between these two sets of vessels, and after circulating through all the vessels of the fetus, returning to the placenta through the umbilical arteries.

The facts which have been detailed, ought we think, to be sufficient to convince even the most sceptical. But the candid author has not been content to rest his conclusions upon them alone. He has submitted them all to a veritable experimenta crucis:—after having demonstrated the existence of the *utero placental vessels* by injections thrown into the arteries of the mother, he confirms the accuracy of the results furnished by one set of experiments, by reversing the order of his investigation, and throwing his injections from the vessels of the placenta and umbilical chord into those of the uterus. Fourteen experiments conducted in this manner are detailed, performed partly on placenta of the human subject, and partly on those of animals.

As the results furnished by these experiments vary in no essential particular from those already detailed, we need not describe them. As injections of the uterus are conceived by Dr. Biancini, to demonstrate a set of utero-placental vessels forming the anastomosis between the uterine arteries and the umbilical vein, so do the second series of experiments prove the existence of a set of vessels, which he has denominated *placento-uterine*, by which the blood is returned from the fetus through the two umbilical arteries to the uterine veins. We regret that our limits will not permit us to furnish an exposition of the interesting facts developed by these experiments, and detail the particulars which were observed in each of them. This, however, cannot be necessary, after what has been said of our author's labours, and we shall consequently be compelled to confine ourselves to a simple enumeration of the conclusions he has formed from the results of his numerous experiments, amounting to twenty-five or thirty in number. They are as follows:—

"1. There are a number of flexuous arteries that connect the uterus directly with the placenta, and which are developed immediately after the period of conception.

"2. It is not true that these arteries are mere prolongations of the uterine arteries, but they are essentially a new production, developed by a fruitful coition: they should be denominated *utero-placental* vessels, because by one of their extremities they anastomose with the uterine arteries, while the other ramifies minutely in the tissue of the placenta. Their office is to transmit the vermilion blood of the uterus to the placenta.

"3. These vessels anastomose with the radicles of the umbilical vein; hence it is inaccurate to say that the placenta is composed of two portions,—one *fetal*: the other *uterine*.

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"4. There is properly but a single placenta,—not spongy or cellular, but arborescent or reticulated, and formed for the most part of the ramifications of the *utero-placental* vessels and the umbilical vein, with their anastomosis.

"5. It is demonstrated, that the red or vermilion blood of the mother, passes from the uterus into the placenta, through the *utero-placental vessels*, and from thence throughout the fetal system through the umbilical vein, by means of the free anastomosis between its radicles and those vessels.

"6. The whole of the blood thus distributed to the placenta, does not traverse it to reach the fetus, but a portion of it remains in its substance, or is circulated by its vessels, to subserve its nutrition and growth.

"7. The umbilical arteries are in communication with the veins of the uterus.

"8. This communication is established by the intervention of a set of large cylindrical vessels, not flexuous, which from their accompanying the *utero-placental* arteries, and transporting the blood from the fetus and the placenta, to the uterus, may be called *placento-uterine veins.*

"9. These veins should not be considered as a prolongation of the uterine veins, but a new product, determined by a fruitful coition.

"10. This connexion between the umbilical arteries and the *placento-uterine veins*, establishes a direct communication between the fetus and the uterus, in the same manner that the anastomosis between the *utero-placental arteries*, and the umbilical vein, form a direct route for the passage of the blood from the mother to the fetus.

"11. The structure of the placenta is altogether reticulated and ramulous, and this arrangement is formed by the disposition of the two orders of vessels already referred to.

"12. The placenta is endowed with a double circulation, one of which is proper to its tissue, the other subservient to the nutrition of the fetus.

"13. The same blood which contributes to the developement of the fetus, also subserves the developement and formation of the placenta.

"14. The arterial blood of the mother is conveyed through the placenta by the utero-placental vessels, and their anastomosis with the umbilical vein, which perform the office of an artery.

"15. One portion of the maternal blood is circulated through the ramulous and reticulated tissue of the placenta, by the collateral ramifications of the utero-placental arteries, and the radicles of the umbilical vein: the other portion is distributed through the body of the fetus by the trunk of that vein.

"16. The blood after having reached all parts of the fetus through the umbilical vein, is returned to the placenta by the umbilical arteries, which perform the office of a vein.

"17. Finally, the blood of the fetus, commingled with that returning from the placenta, is transmitted by the ramifications of the umbilical arteries, and by those of the *placento-uterine* veins, directly to the veins of the uterus."

Dr. Biancini remarks, that the preparations illustrating these facts, and which were obtained from the subjects of his experiments, are preserved in the anatomical cabinet of the University of Pisa. How far others may be satisfied with the justice of his inferences, is not for us to decide. We can only speak for ourselves, and we are free to confess, that we consider the experiments of our author, if fairly and fully stated, as altogether conclusive in favor of the opinion he has attempted to establish. A direct inspection of his preparations, which, with an honorable and high minded candor, he invites, can alone justify a posi-

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tive conclusion. But for ourselves, we are satisfied without such an appeal. We know Dr. Biancini to be an able and most expert practical anatomist,* and from his high qualifications for conducting such investigations, and his distinguished reputation, we have full confidence in his representations, and can confidently recommend his memoir to all who are interested in the subject, as a source from which they will derive a rich fund of useful information.

E. G.

ART. XIV. *Mittheilungen aus dem Gebiete der gesammten Heilkunde. Herausgegeben von einer medicinische-chirurgischen Gesellschaft in Hamburg. Zweiter Band. Hamburg*, 1833. *pp.* 431.

This is the second volume of transactions published by a Medico-Chirurgical Society in Hamburg, the first having appeared about the year 1830. The greatest part of the work is occupied by a series of papers by different authors, on the subject of the epidemic diseases that have prevailed in Hamburg, within a period of seven years preceding its publication. Although these essays are in themselves valuable, and must be read with the highest degree of interest in the country in which the observations were made, and to which many of the remarks are exclusively applicable, yet we cannot in this place undertake to give a regular analysis of them. In the first paper is presented a monthly meteorological register, from January 1829, to December 1831, with an account of the diseases prevailing during each month and the rate of mortality. This is followed by separate dissertations on the diseases that have been epidemic in Hamburg, during the period above alluded to; among these are bilious diseases, intermittents, whooping cough, variola, measles, scarlatina, cholera, jail typhus, and influenza.

The paper on scarlatina, written by Dr. P. Schmidt, contains many interesting observations. After an account of the disease as it existed in Hamburg in 1826, and in Altona, (in the immediate neighborhood of the city,) in 1830, a description is given of the malignant epidemic that occurred in the city itself in 1831. In the course of this epidemic, the author had an opportunity of seeing many cases in which the patients were suddenly, and sometimes very unexpectedly carried off. He observes that a fatal result was frequently produced in consequence of laryngitis and tracheitis becoming associated with scarlatina, and giving rise to the formation of a pseudo-membrane within the bronchia as in ordinary croup. In other cases, death was occasioned by rapidly supervening inflammation of the brain. But many instances were met with, in which after death no important lesion could be found in any of the vital organs. "The most violent and furious delirium preceded death, and we expected to find traces of encephalitis, in patients who had laboured under comatose symptoms, with stertorous respiration and loss of voluntary motion: we looked for an extravasation of blood in the brain, or exhalation into the ventricles, and in both classes of cases, dissection proved that we had been mistaken. I opened the body of a young woman twenty years old, who

*There has been lately added to the museum of the University of Maryland, a most rich and beautiful suit of preparations of the whole lymphatic system, prepared by Dr. Biancini.

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whilst laboring under scarlatina, with moderate fever and a fine eruption, was suddenly attacked with apoplectic symptoms, attended with strabismus, and dilatation of the pupil of one eye, whilst that of the other was contracted, the attack terminating in death in twelve hours. The blood vessels of the brain were about as full as usual, no extravasation could be detected in any part of the organ, nor was any accumulation of serum to be found either in the cerebral ventricles or within the spinal canal. The lungs were healthy and distended with venous blood; both sides of the heart contained fluid, black blood. The organs in the abdominal cavity were perfectly healthy. A sailor of twenty years old, of strong constitution, died suddenly during the eruptive stage of the disease, with comatose symptoms, having for some hours before his death presented an injection of the eyes, and made some complaint of his head. Neither in this case, nor in the one preceding it, had the eruption receded, but was to be seen even upon the body after death. The patient had been treated with leeches to the head and cold effusions. On dissection the brain was found moderately vascular, there was an effusion of serum to a trifling extent into the ventricles, and sheath of the spinal marrow; the right ventricle of the heart contained thin dissolved blood; with the exception of these appearances, there was nothing remarkable to be observed in any part of the body. A hearty blooming maid servant, had sunk suddenly during the stage of eruption, and on examination, I found no trace whatever of disease in any of the organs." p. 167.

These and similar instances of sudden death in scarlatina, our author ascribes to some powerful influence striking at the root of the vital powers, and quickly and irreparably disabling the instruments of innervation. He thinks he has observed in such cases that the blood undergoes an alteration, and that it loses its coagulability both in the heart and great vessels.

The general course of treatment pursued by Dr. Schmidt in this epidemic scarlatina was antiphlogistic. General and topical bleeding in cases of high fever, or local inflammation; salts and calomel; externally, lotions of vinegar and water, warm baths, sometimes cold effusions, blisters, &c. "In severe and malignant cases of the disease" he observes, "no method of treatment was commonly successful, partly because the remedies resorted to may have been used too late, but chiefly because the enemy to be overcome was too powerful for any means that could be brought against it; here the whole train of antiphlogistics and nervines was wrecked upon a rock, which served to show the limits of their science and power, even to those who had the highest opinion of their own abilities, and of the resources of their art." p. 172.

The papers on epidemic diseases are followed by an appendix, containing several essays on subjects connected with obstetrics, one giving an account of observations made in the Lying-in-Hospital of Hamburg, a second on the management of the perinæum during labor, a third on turning by the head.

The last essay in the volume contains a description of some preparations in the pathologico-anatomical collection of the society. The first case is one of fungous tumors of the dura mater; the second an example of a heart with open foramen ovale, perforated septum ventriculorum, and open ductus arteriosus, taken from the body of a woman, twenty-eight years old; the third is a case somewhat similar. The fourth is a partial or circumscribed aneurism of the left ventricle of the heart, with ossification at the seat of disease; when the left ventricle was opened and its anterior wall viewed from the inside, a depression was found to exist in it three-fourths of an inch deep; the diameter of the open-

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ing by which the sac communicated with the ventricle was one and a half inches; it was lined by a continuation of the internal membrane of the heart, which had apparently passed between the muscular fibres; immediately beneath the lining membrane, there was an osseous flake deposited, which was separated from the pericardium by a very thin stratum of muscular substance; the tumor externally was about equal in size to the half of an egg, divided longitudinally. Another case almost exactly similar is also described, in which there was an aneurismal projection near the apex of the left ventricle; the interior of the cavity thus formed was lined by a smooth prolongation of the internal membrane of the ventricle, and was large enough to admit a hen's egg; the pericardium was adherent at the seat of disease. It is certainly to be regretted that nothing is known of the symptoms which may have been occasioned in both these cases by the disease of the heart; we are only informed that both preparations were taken from the bodies of persons laboring under chronic mania. After another case, in which numerous fungiform excrescences were found covering the heart, pericardium and right lung, and in which fungus hæmatodes existed in the substance of the lung, we have an account of a preparation of an *uterus without any opening*. In this case the vagina which extended about two inches above the opening of the urethra, terminated in a cul-de-sac; the ovaria were diseased and enlarged, and were found to contain a large quantity of very dark colored fluid. About a cupfull of the same kind of fluid was contained in the cavity of the uterus; this organ presented no opening whatever, either below, or at the points corresponding with the fallopian tubes. The patient, from whose body this preparation was taken, had never menstruated, and died when she was twenty-three years old. Up to the age of puberty, she had enjoyed good health, but after this period she had attacks of violent pains in the abdomen, recurring regularly every month. A swelling now appeared in the lower part of the abdomen, which gradually increased in size, until the patient died, in a state of marasmus.

Another preparation is designated *uterus bipartitus cum stricturâ vaginæ*, and was procured from the body of a woman who had borne children. Here there was a very narrow stricture in the vagina, about one fourth of an inch above the opening of the urethra; another firm membranous transverse stricture existed in the neck of the uterus; above this the uterine cavity was divided into two small apartments an inch long, and separated from each other by a vertical septum, resembling in structure and thickness the natural parietes of the uterus. From each of these cavities, a fallopian tube passed outwardly. On the left ovarium, there was a tumor the size of a goose egg, and on the right two smaller ones. Of the history of the individual from whom this preparation was taken, nothing further is stated, than that she had severe pain during coitus,—that she became deranged and died young in the general Hospital of Hamburg.

The last preparation mentioned in this account is a specimen of comparative pathological anatomy; it is an example of scirrhus of the mamma, and medullary fungus within the sac of the pleura, found in the body of a sixteen year old hound. This case is described with great minuteness of detail, but we shall readily be excused from giving any further account of it, and may here conclude our brief notice of the volume. C. J.

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QUARTERLY SUMMARY OF INTELLIGENCE.

FOREIGN INTELLIGENCE.

ANATOMY AND PHYSIOLOGY.

1. *The Placenta probably a Gland*, from Dr. Graves' Lecture on the Lymphatic System.—Fohman has proved that the lacteals always terminate in a *cul de sac;* and therefore that they absorb through the membranes which form their parietes. Muller, whose splendid work on the structure of glands I have analyzed in the first number of the Dublin Journal of Medicine, shews that the ultimate ramifications of all ducts terminate in *cul de sacs*. From this it follows that no *direct communication* exists between the vessels which secrete and the ducts which receive the secreted fluids. It is probable, therefore, that the maternal vessels and those of the fœtus may carry on an active interchange of principles, although no direct communication by openings or mouths exist between them. The vessels of the mother may carry principles necessary for the nutrition and respiration of the fœtus, and may freely impart them to its vascular system, while, on the other hand, every thing which requires to be excreted from the fœtal system, may, in like manner, as easily find its way into the maternal veins, and so be gotten rid of. I cannot help thinking that this view of the placenta, which, by comparing the relation between the ultimate ramifications of the maternal and fœtal vessels with those of the secreting vessels and ducts in glands, points out not merely the analogy, but almost the identity of this relation, deserves the attentive consideration of physiologists. It is to Muller that we are indebted for understanding the analogy which the lungs bear in their structure to glands; and his researches first suggested to me the idea, that the placenta may be considered as a temporary gland, destined for the nutrition and respiration of the fœtus.—*Dublin Journal, March*, 1834.

2. *On the relation between the Iris and Palpebræ, &c.* By JOHN WALKER, *Assistant Surgeon to the Manchester Eye Institution.*—In a paper which I had the honor to read before the Philosophical Society of Manchester, and which has since been published under the title of "An Essay on the Physiology of the Iris," I endeavored to establish a new view of the relations and sympathies of the iris. All preceding theories had assumed that the changes of the pupil are the result of a sympathetic action between the iris and retina, and that these two are related to each other in some manner similar to the ordinary relation between a muscle and a nerve. It is not my intention here to repeat the arguments there adduced; from which I came to the conclusion that the motions of the iris are independent of the retina. I may, however, briefly allude to one or two points; such as the fact that the motions of the iris are often complete when the retina is in a state of perfect paralysis; that the retina is not a nerve, in the ordinary acceptation of that term, but a part endowed with a particular function through its own nerve, the optic; that when the retina is in a state of inactivity, during sleep, the pupil is powerfully contracted; that the iris is, to all intents and purposes, a true internal eye-lid, its actions corresponding with the palpebræ, both being contracted during sleep, both expanding the moment we awake; that the motions of the iris are proba-

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bly dependent upon this association with the eye-lids, as well as upon its own sensibility to light, &c. To establish its connexion with the palpebræ, I referred to the ophthalmic ganglion, which gives off the ciliary nerves which go to the iris. I pointed out that this ganglion is formed by two nerves, branches of the third and fifth, which are also distributed to the eye-lids, and that consequently the iris and palpebræ are anatomically and physiologically related. I ventured to deduce from these premises, that the sympathies and relations of the iris are with the palpebræ, and not with the retina, as is generally taught and believed. I argued, that the sensibility to light is derived from the fifth pair of nerves, and that, consequently the eye-ball generally, and the eye-lids, are all subject to its influence; and that the retina is simply the medium for conveying pictorial representations to the brain. Nor can there be any thing more objectionable in this view than in the parallel case of the tongue, which derives its sense of taste, as well as its common sensibility, from the fifth pair of nerves; a fact admitted by all physiologists. But with respect to the motions of the iris, I conceive them to be regulated by the ophthalmic ganglion—that the branch of the fifth pair probably gives it the power of contracting, whilst its dilating property is to be attributed to the third pair. I cannot but consider this as a fair deduction from analogy with the motions of the eye-lids. Anatomists now agree that the iris is possessed of two distinct sets of fibres—namely, a set constituting an orbicular or sphincter muscle around the pupiliary margin, and another set, termed the radiated fibres, proceeding from the ciliary margin. Indeed it is very easy, in the living eye, often to distinguish the two sets of fibres. In one particular instance I have observed the two sets perfectly distinct, with considerable difference of color in them. I consider, then, these two sets of fibres as two distinct muscles; that they are strictly analogous and related to the two muscles of the palpebræ, and that the sphincter fibres of the iris correspond with the orbicularis palpebrarum, as the radiated fibres do with the levator palpebræ. That their actions correspond is evident: as before intimated, the sphincter fibres of the iris are contracted in sleep, so are those of the orbicularis palpebrarum; when we awake, the radiated fibres have the preponderance, so has the levator palpebræ. In adapting the eye to different distances, the same relation is observed; in looking at distant objects, the pupil dilates and the eye-lids are separated, whilst the reverse happens in viewing near or minute objects.

But it is said, you are endowing the branch of the fifth pair, which goes to the iris, with the power of motion, whilst physiologists assert that it merely bestows sensibility upon the eye. On referring to the anatomy of the fifth nerve, we find that it gives different branches to the iris as well as to the eye-lids. Now we know that the fifth is a double nerve, possessing or contributing to, two distinct properties—viz. sensibility and mobility. The latter seems to be overlooked in all its branches, except those supplying the muscles of the jaw. It appears to me, in the case of the iris that this nerve bestows upon it, not sensibility merely, but, as before mentioned, the power likewise of contracting its aperture; whilst the dilating power is acquired through the branch of the third pair. It is worthy of notice, that the iris receives at least two or three branches from the fifth pair; one uniting with a branch of the third, to form the ophthalmic ganglion, and one or two other branches afterwards, which pass with the ciliary nerves to the iris, the latter, it seems probable, for the purpose of bestowing upon it sensibility, whilst the ganglion presides over its motions. It would appear that injury or disease of either nerve would arrest the functions of the ophthalmic ganglion, presuming it to be the regulator of the motions of the iris. In Magendie's experiments, after dividing the fifth, the pupil became dilated and motionless. In Mayo's experiment of dividing the third, the same occurred. Cases have been observed also, of paralysis of the muscles supplied by the third, where the iris was also paralyzed and the pupil dilated. Some writers have stated that the ciliary nerves are, in some animals, supplied merely from the fifth, and others simply from the third pair;

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so that although both are probably essential to the perfect motions of the iris, yet it seems likely that sometimes either alone is sufficient for this end.

The iris is evidently a part of great complexity. I know no better term to describe its varied actions and properties than that of internal eye-lid. It exhibits the same phenomena of opening and shutting, and the same sensibility to light and other stimuli, as the true eye-lids. In addition to its two distinct sets of muscular fibres, corresponding to the levator and orbicularis palpebrarum, it possesses a delicate and beautifully variegated lining membrane, in which resides probably, the seat of sensibility, and which, at all events in the latter point, resembles the lining membrane of the external lids. The general purposes of both are obviously the same.

It has already been stated that the nerves of the iris, or at least branches from the same parent nerves, go also to the palpebræ—viz. the third and fifth. In addition to these, branches are also sent from the portio dura. Now this complexity it is that occasions the difficulty which we find in explaining the various movements of the eye-lids. What are the uses of all these nerves? The use of the third, as connected with the palpebræ, is sufficiently clear: it gives the power of motion to the levator palpebræ; so that the functions of this nerve is quite evident, and it is consequently easily disposed of. This cannot be said of the other two. That the fifth nerve, however, gives to the palpebræ, as well as to the eye and face generally, the property of sensibility, seems also indisputable. Are we sure that it does not control some of the motions of the palpebræ, and perhaps of the face? Branches of this nerve, we know, are sent to the corrugator supercilii, frontalis, and orbicularis palpebrarum; as well as to all the muscles of the face. What end can be answered by such a distribution, if not to supply these muscles with voluntary motion? Can we suppose those branches intended to bestow sensibility on these muscles? What good could be gained by endowing them with such a property? They are the instruments of motion, and not of sensation. If the orbicularis need such sensibility, why does not the levator palpebræ require it? and yet nothing is said about any branch of the fifth going to the latter muscle, or to any of the muscles of the eye. So that it seems perfectly reasonable to conclude that the branches of this nerve, which are connected with the muscles of the palpebræ and iris, are intended to supply these muscles with the power of motion, as similar branches do those of the jaw.* But we know, likewise, that branches of the portio dura go to the orbicularis; and then the question is, of what use is another set of nerves to the same muscle? Now whether this is merely to connect the eye-lids with the face, in expression or respiration, or in what other way, does not seem very clear. The portio dura is considered, by Sir Charles Bell, as the respiratory nerve of the face; and, if I understand his theory of the nervous system, he considers the respiratory portion of it perfectly distinct from those parts connected with sensibility and voluntary motion. Now then, if the branches of the portio dura be for the respiratory movements of the eye-lids and face, the inference is, that the branches of the fifth are for their voluntary motions; and yet this is far from being established at present; so that, notwithstanding the great discoveries in this branch of knowledge, effected by Sir C. Bell, something still remains to be done before we can consider our information on these points as perfectly satisfactory.

The motions of the orbicularis palpebrarum are various and distinct—such as the closing of the eye-lids in sleep and by the efforts of the will—an almost continual motion, termed winking—as well as an action in sneezing, laughing, &c.; and it seems not improbable that some of these motions are dependent upon the fifth, and that the others are derived from the portio dura. At all events, it appears reasonable to conclude that both nerves are essential to the perfect motions of the orbicularis—the one probably to connect it with the eye,

* It seems probable, that if the muscles of the jaw had also branches from the portio dura, to the latter alone would be attributed the voluntary motion they possess; but, as it is not so, physiologists are compelled to admit that the fifth is here a nerve of motion.

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the other with the face. The union of these two nerves over every part of the face is most intimate: they appear to inosculate with each other, so as to form a kind of plexus; and one would be almost tempted to imagine that injury or disease affecting one might produce a corresponding affection of the other, or rather, might be attended with impaired function of both, as we find to be the case with the union of the fifth and third, termed the ophthalmic ganglion. Experiments, conducted with this view, can alone, perhaps, settle this point. In one experiment, by Magendie, made upon a rabbit, of dividing the fifth pair of nerves, we are told, "the motions of the eye-lids, called winking, had ceased." In similar experiments on other rabbits, "the eye-lids were either separated to a considerable distance from each other, and motionless, or were glued together by the puriform discharge which had dried on their edges," &c. If these experiments do not prove that the fifth has something to do with the motions of the eye-lids, it would be interesting to know what they do prove.

In an experiment by Sir C. Bell, it seems to be established, that certain muscles may be deprived of their connexion with the respiratory system, whilst they continue to possess voluntary motion. This eminent physiologist observes, "I divided its branches (viz. the spinal accessory) in the living animal, and by that means cut off certain muscles from partaking in the act of breathing, while they retained their office under the other nerves; that is, they remained under the direction of the will, when they had ceased to be influenced by the lungs."* The same is expressed elsewhere. "When it is cut across in experiments, the muscles of the shoulder which were in action as respiratory muscles, cease their co-operation, but remain capable of voluntary action."† With respect to the nerves of the face, he continues—and this brings us still nearer to the point; "Directed, in the next place, to the portio dura, I wished to answer the question, Why does the nerve which supplies the muscles of the face take an origin and a course different from the fifth nerve, destined to the same parts? By experiment I proved that this was the respiratory nerve of the face: and by inference, I concluded that it had the origin we see, and took its course with the respiratory nerves; because it was necessary to the association of the muscles of the nostrils, cheek, and lips, with the other muscles used in breathing, speaking, &c. For this reason, it was associated with the root of the eighth pair instead of the fifth." Now, here Sir Charles Bell admits, that the portio dura is the nerve which connects the face with the remainder of the respiratory apparatus; but he has not furnished us with a key to the voluntary action possessed by these muscles, whilst it is quite clear that he considers the respiratory as distinct from the voluntary nerves.

In the same work, just quoted from, is a note, from a paper by that excellent anatomist, the late Mr. John Shaw. He observes, "if we cut a branch of the fifth which is distributed principally to the skin of the lips, we shall destroy the sensibility of the part, but impair the power of mastication only in a slight degree; but if we divide the nerve farther back, then we shall not only destroy the sensibility of the skin, as in the first experiment, but also cut off the power by which the jaws are moved. I cut a branch of the fifth upon the face; the sensibility of the corresponding side of the lip was destroyed, but little paralysis ensued."‡ Now, here is an admitted fact, that some effect was produced upon the muscles of the lip: true it says "but little paralysis ensued," but still paralysis there evidently was to a certain extent.

It would seem as if Sir Charles Bell had, at one time, been nearly led to look at the double nervous supply to the face in the way I have now done. He says, "If we were barely to consider this distribution of the portio dura of the seventh, unbiassed by theory or opinion, we should be forced to conclude, that it is not alone sufficient to supply any one part with nervous power, for every one of its branches is joined by divisions of the fifth. The question then naturally

* Exposition of the Nervous System, 1824. Octavo edit. p. 58.
† Ibid, p. 91.
‡ Page 84.

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arises, whether these nerves perform the same function? whether they furnish a double supply of the same property or endowment? or whether they do not perform different offices?"* Sir Charles then relates experiments which he undertook with a view of illustrating the functions of the two sets of nerves. "An ass being thrown, and its nostrils confined for a few seconds, so as to make it pant and forcibly dilate the nostrils at each inspiration, the portio dura was divided on one side of the head; the motion of the nostril of the same side instantly ceased, while the other nostril continued to expand and contract in unison with the motions of the chest." . . . . . "The animal being untied, and corn and hay given to him, he ate without the slightest impediment." This experiment clearly proves that the portio dura is the respiratory nerve of the face; and it as clearly proves that the muscles of the face can act independently of the influence of that nerve The animal "ate without the slightest impediment." Are not all the muscles of the face in action during the process of eating? There is not merely the opening and shutting of the jaws, but the separation of the lips, and the general consentaneous action of the muscles of the cheeks. This experiment, in my opinion, proves that the action of the muscles of the face is independent of the portio dura, except so far as its connexion with respiration is concerned. If this nerve had presided over the voluntary motions of the lips, *they would have been found twisted to the opposite side*, as occurred in the next experiment. "The superior maxillary branch of the fifth nerve was divided, but no change took place in the motion of the nostril; the cartilages continued to expand regularly in time with the other parts which combine in the act of respiration; but the side of the lip was observed to hang low, and *it was dragged to the other side*. The same branch of the fifth was divided on the opposite side, and the animal let loose. He could no longer pick up his corn; *the power of elevating and projecting the lip, as in gathering food, appeared lost*. To open the lips, the animal pressed the mouth against the ground, and at length licked the oats from the ground with his tongue. The *loss of motion* of the lips in eating was so obvious, that it was thought a useless cruelty to cut the other branch of the fifth." This experiment proves that the fifth is totally unconnected with the respiratory system. It proves, further, that the fifth is a nerve of motion, as well as of sensation. The lip of the side experimented upon "*was dragged to the other side.*" Will it be said, that this arose from any other cause than the loss of power in the muscles of the lip of the injured side to retain it in its natural position? Could the inability to pick up his corn, and the loss of "the power of elevating and projecting the lip," when the nerve of the opposite side was also cut, arise from any other cause than loss of power over the motions of the lips? As Sir Charles Bell himself says, "the loss of motion of the lips in eating was so obvious, that it was thought a useless cruelty to cut the other branches of the fifth." But, strange to say, Sir Charles, as appears by a note, subsequently altered his views of this experiment, and imagined that nothing more than loss of sensation was here proved. It is painful to differ from so distinguished a physiologist; but do we not daily witness complete loss of sensibility with a perfect state of the motions of various parts? Here, most probably, sensibility and motion of the lips were both destroyed; but certainly I cannot persuade myself but that the motions of the lips were paralyzed, whether the sensibility was so or not. The very fact that the lip was dragged to the opposite side, in the first part of the experiment, proves that the muscles of that side could no longer act. What had that phenomenon to do with loss of sensibility? And if the animal, in the second part of the experiment, could not feel with the lips, still, if it had retained the power of motion, it would nevertheless have been able to elevate and project them.

Other facts are adduced by Sir Charles, which prove not only that the portio dura is the respiratory nerve of the face, but likewise, that it is nothing more. In a monkey, after cutting this nerve, "the timid motions of his eye-

* Page 104.

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lids and eye-brows were lost, and he could not wink on that side: and his lips were drawn to the other side, like a paralytic drunkard, *whenever he shewed his teeth in rage.*" Now what are we to infer from this experiment, but that the animal retained the power of the muscles, except when in a state of excitement, when the whole respiratory system was agitated? Here there is no distortion of the mouth, except when he is in a state of rage. If this nerve had presided over the muscles of the lips at all times, he must have been, at all times, in the condition of the ass in the previous experiment, who had his lips permanently dragged to the opposite side, after division of the fifth. The timid motions of the eye-lids and eye-brows, and the motion of winking, were all lost on that side; but nothing is said about a loss of the ordinary motions of those parts contracting the eye-brows and closing the lids.

A case is next related of "suppuration of the face anterior to the ear, through which the nerve (portia dura) passed in its course to the face. It was observed that, *in smiling and laughing*, his mouth was drawn in a very remarkable manner to the opposite side. The attempt to whistle was attended with a ludicrous distortion of the lips; when he took snuff and sneezed, the side where the suppuration had affected the nerve remained placid, while the opposite side exhibited the usual distortion." Here also it is quite plain there was no permanent paralysis of the muscles—no loss of their voluntary actions—nothing remarkable except when laughing, sneezing, or in some other motion connected with respiration.

Another case worthy of notice is that of "Thomas Barrett, a patient in the hospital, who had his mouth drawn to the left ear; the eye-lids of the right side remain open; but the temporal and masseter muscles retain their power." This likewise is considered by Sir Charles as an instance of the disease of the portia dura; but there is this remarkable difference, that the paralysis is constant, whilst in the others it was only observed during some act of respiration, such as whistling, laughing, &c.; and if we may be permitted to draw an inference from the experiment of dividing the fifth on the ass, this case may be fairly set down as a disease, not of the portia dura, but of the fifth. We are borne out in such inference from what Sir Charles elsewhere says, "in the individual whose face was paralysed on one side during the excited state of the respiratory organs, there could be observed no debility or paralysis in *the same muscles when he took a morsel into his mouth and began to chew;*" so that we are evidently to look to the fifth nerve for the action of the muscles in eating (I presume a voluntary action;) and these muscles are not merely those of the jaws, but likewise those of the cheeks and lips.

In attempting to irritate the portia dura, the slightest touch "convulsed the muscles of the face;" whilst in irritating the branches of the fifth, "it was *more difficult* to produce any degree of action in the muscles." This only proves that the respiratory nerves are more easily excited than the common nerves. Had no action of the muscles followed the irritation of the branches of the fifth, then it would have been a legitimate conclusion that they ministered to none; but as an action did follow such irritation, though more difficult to produce, it seems perfectly correct to conclude, that such motion is also derived from this nerve. Indeed, if those motions of the face and eyelids, which are unconnected with respiration, are not affected through the fifth nerve, then is Sir Charles's theory perfectly upset, since it would prove that the portio dura is a nerve of voluntary, as well as respiratory motion; which is contrary to what he has advanced with regard to the respiratory nerves generally.

Elsewhere Sir Charles observes, "I have found in an individual, that, when the cheeks and lips were twisted by paralysis, he possessed the power of holding with his lips in a manner that indicated a power independent of the seventh." Mr. Shaw also says of a case, "if told to laugh with the right side, she raises the angle of the mouth, but by an action which is evidently regulated by the fifth."

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Almost every page of this part of Sir Charles's work is filled with proofs of this double set of motions of the muscles of the face. He says, "all such affections of the respiratory nerve will now be more easily detected; *the patient has a command over the muscles of the face; he can close the lips, and the features are duly balanced;* but the slightest smile is immediately attended with distortion; and in laughing and crying the paralysis becomes quite distinct." If this does not imply that the common motions would remain unimpaired after injury to the portio dura, I dont know what else it can mean; and yet Sir Charles imagines that, if a surgeon were to cut the branch of the portio dura which goes to the eyelids, they "thenceforward would stand apart, the eye would be permanently uncovered, and the cornea become opaque, and the vision of the eye be lost." This I believe to be a *non sequitur.* It is contradicted by Sir Charles's previous experiments. The phenomena here predicted would, I think have followed the cutting of the branch of the fifth which goes to the eye-lids, as occurred in the experiments of Magendie. Several other cases might be extracted from Sir Charles's work, but that I think a sufficient number have already been noticed.

It is the fashion at present to attribute every paralytic condition of the muscles of the face to disease of the portio dura. This is not surprising, when the discoverer of the grand distinction between the respiratory and the other nerves has failed to apply to the muscles of the face the important principle which he has so satisfactorily established generally.*

From observation and consideration of the cases and experiments alluded to, it may be safely inferred that all cases of permanent distortion of the lips must arise from paralysis of the fifth pair of nerves; whilst that twisting which is observed only during laughter, &c. is to be attributed to paralysis of the portio dura. In cases of permanent twist of the mouth, it is very common to find that the sensibility is likewise impaired; in such a case there can be no question but that the disease is to be referred to the fifth.

My object, originally, was to attempt to prove that some of the branches of the fifth pair, which go to the iris, contribute to its motions. I was thus led to inquire into the properties of those branches which are distributed to the muscles of the eye-lids and face: if, in these researches, I shall have assisted in elucidating those points, it cannot be otherwise than a source of considerable satisfaction to myself, and of some slight interest to the profession.

I shall close this paper, already perhaps too long, by relating two cases which I conceive to bear on this question, and which I consider to be instances of diseased action of the fifth pair.

Case I.—*Sympathetic action of the Eye-lids and Iris.*—Jane Ford, æt. 8, admitted a patient of the Manchester Eye Institution, November 26, 1833, with the following symptoms:—The eye-lids of the left side are spasmodically closed, with a constant twitching motion of the fibres of the orbicularis; and a corresponding action of the orbicularis oris, so that the mouth was drawn *to the affected side;* without any loss of sensibility to touch, or diminution of taste or smell. On separating the eye-lids, the sphincter fibres of the iris were found to be in a similar excited state, the pupil continually contracting and dilating with considerable rapidity (hippus pupillæ,) independently of variations of light. She says that she cannot perceive the slightest object with this eye, not even the light. She was ordered leeches, calomel, &c.; and on the third of January presented herself quite well.

This affection is considered by Beer as symptomatic amaurosis, arising from hysteria, convulsions, &c. It is difficult to decide whether this was really amaurosis, or whether the inability to see might not be occasioned by the irregular state of the pupil. The age of the girl was unfavorable to obtaining any very correct information; but the symptoms narrated do not admit of misinterpretation, and they could not be imitated. This case I venture to

* In a lecture published in the Medical Gazette, Feb. 8, I observe that Sir Charles still speaks of the muscles of the jaw merely as deriving motion from the fifth.

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bring forward as an illustration of sympathetic action between the eye-lids and iris. I cannot but consider it as strongly corroborative of the opinions I have advanced on this point, as well as its being an affection of the fifth pair of nerves, although a very different affection from paralysis. At first I was inclined to refer the closure of the eye-lids to paralysis of the levator palpebræ; but from the convulsive action of the orbicularis, joined with the other symptoms, I was induced to alter that view.

Case II.—*Partial Paralysis of several parts of the Face, from affection of the fifth pair.*—Mr. C. clerk in an assurance office, called on me, November 20th, 1833, complaining of disagreeable sensations about the face and neck, with loss of power over some of the muscles of the face, which had commenced on the preceding day, and for which he could not at all account. The affection was confined to the right side. The mouth was drawn to the opposite side permanently, and he complained of diminished sensibility of the side of the face, particularly about the lips. The tongue slightly distorted; the right side of it almost insensible to touch, and the taste very much impaired, so that he could not distinguish bread for beef. When any portion of food gets between the teeth and the cheek of the affected side, he is unable to dislodge it, except with his finger. The winking motions of the eye-lids were imperfectly executed, and he could not close them completely. Vision was unimpaired. One remarkable symptom was an insensibility to the stimulus of light: the eye being placed close to a strong gas light, no irritation was produced, and no attempt at closing the lids was made; but the conjunctiva was sensible to touch. The iris was in this case perfectly natural. He complained of tenderness over various parts of the neck and face, and particularly about the superior part of the spinal column; but had not suffered any pain or giddiness of the head. The application of leeches to the neck, followed by a blister, and the internal use of mercurials, &c. completed his recovery in about a month or six weeks.—*Lond. Med. Gaz. April,* 1834.

PATHOLOGY.

3. *Report of a Case of Urinary Calculi, containing Human Teeth, removed from the Female Bladder.* By George William O'Brien, M.D.—Mary Mac Mahon, a laboring woman, aged fifty years, was admitted into the county of Clare infirmary, on the 9th of October, 1833, suffering from symptoms of stone in the bladder. She complained of severe pain, and appeared much harassed and reduced by the complaint.

The account she gave of her previous state of health was not very satisfactory; from her statement, however, it appeared that about four months ago she became affected with acute pain in the loins; this, however, gradually diminished; but was succeeded about six or seven weeks since, by difficulty in making water. The desire to evacuate the bladder is now constant, and the pain felt on attempting to do so quite excruciating, especially after the bladder had been completely emptied. The flow of urine is at times altogether interrupted; and the pain becomes then most severe until the evacuation is again restored. For the last three days she has had complete retention. Irregular shivering fits, followed by copious cold sweats and by loss of appetite and rest, have contributed to reduce her to a very helpless state.

Upon sounding the bladder, a calculus can be distinctly felt, and seems to be of considerable size. She states herself, that once or twice, the stone came so close to the orifice, that she has been able to scratch some of it off, with her finger. The necessity for attempting to remove the stone having been determined on, the patient was placed in the sitting posture on a chair, the legs being held asunder by an assistant. A small forceps was now introduced, with which, after much trouble, the calculus was seized; but having broken on account of its brittleness, it again slipped away from the instrument. The forceps having

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been once more introduced, the calculus was with great difficulty secured between its blades. An effort was now made to bring it through the urethra, but after a long trial, it altogether failed. Finding that the stone could not be got thus to pass, a small incision (about a quarter of an inch long) was made, with a blunt pointed bistoury, in the anterior part of the uretha, as being the most convenient direction. On this being done, the calculus was readily extracted. It was of an oval shape, with its sides much flattened, and one of them smooth as if it had rubbed against another stone. From the opposite side appeared a projection about a quarter of an inch in length, presenting a striking resemblance to a human tooth, with the fang turned outwards. On clearing away the calculous matter from around this projecting body, it proved to be indeed a human tooth; one of the molars possessed of a perfect covering of enamel.

During the operation the patient fainted, and continued so weak that it was necessary to remove her immediately to bed. A full opiate was administered, and she remained tranquil for a few hours; at the end of this time, however, another paroxysm of pain came on, and after much suffering another calculus came away. From this time she got complete and permanent relief. This second calculus was of an egg shape, somewhat larger than the first, and quite smooth. On examination it had a glossy appearance at one end, which on being scraped presented the extremity of another tooth.

The patient slept well on the night after the operation, (which she had not done for some time before,) and she expressed herself as having been greatly relieved. The urine at first flowed freely and constantly through the wound, which, however, had completely healed in a week. Her amendment was now in every respect rapid. She could retain her urine perfectly, and her general health and appearance were much improved.

In reply to our inquiries, she could give no account of the teeth which had been found in her bladder, nor had she any idea of their being there; but mentioned that all her teeth had been loose for the last thirty years; since she had taken mercury for a venereal complaint, communicated by her husband. A number of her teeth had from time to time fallen out; some having been found in her bed, which had dropped out at night, while she was asleep; but she could not say that every one had been found that had dropped out. She had not had any serious illness from the time she had taken mercury until the present attack; and at no time did she appear to have had any complaint like inflammation in the abdomen. We are therefore left wholly to conjecture, in attempting to account for the novel phenomenon, of human teeth being found to constitute the nuclei of stone in the bladder.

In attempting to account for the presence of the teeth in this situation, it has been supposed that they may have been swallowed and so have passed by ulceration from the intestinal canal to the bladder; but this mode of accounting for the phenomenon, is the more difficult, from the absence of all antecedent symptoms of abdominal disease, and the occurrence having taken place in the female; unless indeed we may suppose the communication with the bladder to have occurred far up in the intestinal canal. The generation of the teeth in a diseased ovarium, and their transit thence to the bladder, is a supposition equally difficult to reconcile with the history of the case; and we are left but one mode of accounting for the occurence, by supposing that the teeth may have been introduced by the patient herself; an explanation for which there is no sanction in any thing that could be gleaned from the history of the case; but which certainly derives countenance from the records of some extraordinary cases of this description. I have not been myself, however, led to adopt this opinion, but rather incline to the idea of the teeth having found their way from the intestinal canal into the bladder; though nothing in the history of the case enables me to account for their having done so. What was of most consequence to the patient, however, she was discharged from the hospital perfectly well, on the 12th of October; after having been nine days under treatment.—*Dublin Journal, March*, 1834.

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4. *Two cases of fatal Enteritis, caused by hardened feculent matter in the Appendix Cœci.*—Case I.—April 30, 1832, J. H. aged 10 years, a robust and healthy boy, complained suddenly of a pain in his bowels, referred chiefly to the right iliac region. The pain, although continued, did not excite much attention till the evening of the 2d May, when a medical gentleman residing in the house prescribed some aperient medicines and fomentations. The following morning, May 3d, we were requested to see him, and found the abdomen exceedingly tense, and painful on pressure, but mostly so in the situation of the caput coli. The bowels had been freely relieved by the medicines; the motions were liquid and natural in appearance; pulse 120 and small; great anxiety of countenance. Recourse was immediately had to copious bleeding, leeching, fomentations, &c. but without any mitigation of the symptoms. He still referred his sufferings, chiefly to the caput coli. Vomiting, distention of the abdomen, &c. supervened, and he died on the following morning, May 4th.

Examination post mortem.—On laying open the abdomen, the peritoneum presented marks of the most intense inflammation; the omentum was glued to the adjacent parts by recent adhesions; the interstices of the bowels were filled by coagulable lymph. As we approached the cæcum, the disease appeared to have raged with increased severity, and upon examining that part more minutely, we found the appendix vermiformis in a state of gangrene, containing within it a substance about the size of a cherry stone, which proved to be a portion of hardened feculent matter.

Case II.—February 8th, 1834. C. U., aged fourteen years, of delicate constitution, but apparently in good health, was attacked early in the morning with vomiting. The preceding day he had taken unusually active exercise, had gone to bed well, and referred his sickness to something he had eaten at dinner. He complained of no pain in his bowels, nor had they been constipated; but the abdomen was slightly tender on pressure. Towards evening the symptoms of abdominal inflammation became more fully developed, and were met, during that night and the following day, by the most active treatment, such as general and local bleeding, fomentations, enemata, &c. but without any decided benefit. The vomiting ceased; he was able to retain any thing upon his stomach, and he complained of no pain except on pressure. Still the tenderness continued to increase, particularly towards the right iliac region. Nothing passed through his bowels; the abdomen became distended, and on the morning of the 10th, death put an end to his sufferings.

Examination post mortem.—On laying open the abdomen, the omentum was seen drawn towards the cæcum, a small portion adhering to that bowel, and in a state of gangrene. The small intestines were exceedingly distended with air, and exhibited marks of great inflammation. They contained very little feculent matter, and no stricture was found in them. The large intestines had been cleared by the enemata. Upon approaching the cæcum, the marks of inflammation became more intense; coagulable lymph was thrown out in abundance; the appendix vermiformis was found adhering to the subjacent parts, in a gangrenous state, and distended by a portion of feculent matter, of the size of a small nutmeg, and nearly as hard.—*London Lancet, March*, 1834.

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5. *Death from perforation of the Rectum with a Bougie.*—A clergyman of this town, a highly respected man, and on whom a wife and eight children depended for support, became suddenly afflicted with inflammation and mortification of the bowels, occasioned by the improper and incautious use of the rectum bougie. He had been several years troubled with irregularity of the bowels, and had used a great variety of aperient medicines to preserve himself in any degree of comfort; he had also used the lavement syringe with great benefit. He felt persuaded, however, from his own feelings (and contrary to the opinions and reasonings of many medical friends whom he consulted,) that a narrowness of the gut was gradually coming on, and that unless some means were adopted to dilate the passage, and prevent the increasing difficulty in its

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function, he should ere long be incapable of passing his feces. As he continually labored under this impression, he consulted a surgeon, who recommended the use of bougies, and an assortment of various sizes was procured. They were well formed, and adapted for the purpose intended, and were regularly used, with apparent ease and satisfaction to the sufferer, up to the day of the fatal attack of illness. That morning he used the bougie twice, but not being sufficiently relieved by the first attempt, he passed the instrument a second time, and remarked that he did so much easier than at any former introduction. On reaching his home at about one o'clock, P. M. I was sent for, and on arriving, I found him complaining of acute pain in the pubic region, accompanied with difficulty in passing urine. A general chill pervaded the whole frame. I directed him to go to bed and apply heated substances to the surface, to drink warm diluents, and to take some medicine which I sent him. In less than half an hour I was again required to see him; the pain had greatly increased, and had ascended to the right side, accompanied with difficult respiration; he still continued cold; artificial heat was applied with great diligence, and after some time reaction was produced. He was bled copiously, producing syncope, but without any abatement of suffering, and I gave him strong cathartics, which the stomach retained. No evacuation *per anum* took place, but he passed urine freely during the night; twenty-four leeches then were applied to the side, and enemas were administered, but all without relief. He rapidly became worse, his pulse sank, respiration became laborious, the stomach was greatly oppressed, and he died at about four P. M. twenty-six hours from the commencement of the attack.

Sectio cadaveris.—On opening the abdomen, much very offensive air escaped, raising the small intestines. Very extensive inflammation pervaded the whole canal; the lower portion evinced the greatest degree of inflammation, with extensive mortification. A dark colored pus-like fluid was contained in the cavity of the pelvis, or, rather, a fluid presenting the appearance of light colored feculent matter. The same kind of matter adhered to the lower surface of the intestines. Lymph had exuded, and formed adhesions among many of the folds of the small intestines. A ligature being applied above the sigmoid flexure, the rectum was removed, and in the middle portion was found an opening, which penetrated the gut and adjoining portion of peritoneum. This must have been caused by the too frequent use of the bougie. Through the opening a portion of liquid feces had escaped, occasioning inflammation, mortification and death.—*Ibid.*

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6. *From Dr. Stokes' Lectures on the Theory and Practice of Medicine.*—I wish here to make some observations on a very remarkable form of gastro-duodenitis, which was almost epidemic in this country some years ago, at least it occurred during the existence of an epidemic fever, and we had at that time a great many cases of it in hospital. It is a curious fact that the majority of these seemed to bear a distinct resemblance to the yellow fever of warm climates. This will appear somewhat extraordinary; but, when you have heard a statement of the facts, you will be inclined to think that these cases were nothing more or less than so many instances of the malignant yellow fever of the tropics. I shall read for you an account of the symptoms, as they were observed in numerous cases under the care of my colleague, Dr. Graves, and myself, in the Meath Hospital.

In the great majority of cases this disease was preceded by fever, in fact all the patients who exhibited this form of jaundice, had been admitted as fever patients. After a longer or shorter period, without any premonitory indications, symptoms of intense irritation of the digestive tube set in, and advanced with a fatal rapidity. Most of the patients vomited frequently; there was great tenderness of the epigastrium and over the region of the small intestine; the tongue became black and parched; there was a violent pain in the belly, and a spasmodic affection of the abdominal muscles, which felt hard and knotted, and to which the nurse gave the name of *twisting of the guts*, a

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name which singularly agreed with the numerous intussusceptions found along the course of the small intestine after death. This state of suffering continued from one to four hours, and then the body became all over suddenly jaundiced. Then came another train of symptoms. With intense and universal jaundice the patients exhibited also extreme restlessness, tossing their arms about, and regarding their attendants with a look at once expressive of nervous suffering and despair. Some raved, had trembling and convulsive fits, and were totally unconscious of every thing passing around them: others preserved their intellect to the last, but they had depicted in their countenances an agony and a despair which I shall never forget. General spasms were frequently observed; and many on attempting to swallow, had spasms like those of hydrophobia. There was great irritability of the stomach; many vomited frequently, and in some cases the matter ejected bore an exact resemblance to coffee grounds. The pulse became low and fluttering, the extremities cold, the face pale and shrunken, and in some the nose assumed a purple color, giving to the patient a truly horrible appearance. This change in the color of the nose was preceded by extreme paleness; the part at first, appeared as if it had been frost bitten. Broad patches of a wax-like whiteness, elevated a little above the level of the skin, and somewhat resembling urticaria, having the same temperature as the rest of the body, were found on the following day to assume a reddish color: and on the third day the redness was converted into dark purple. The toes were affected in a similar way; and in some of these cases the parts so affected sloughed and were thrown off. There is at present in this city a woman who lost the alæ of the nose and one of the toes in this manner.

The phenomena observed on dissection were equally remarkable. Though the tenderness of the epigastrium was very great, there was no trace of peritoneal inflammation; *neither was there in any case inflammation of the liver, and the gall ducts were found to be pervious in every instance.* The mucous surface of the stomach and duedenum and ileum were found in every case to present intense marks of inflammation, there were numerous intussusceptions along the course of the ileum, and the spleen was found to be large, soft and pultaceous. There was no evidence of inflammation of the brain, but in the ventricles and at the base of the brain there was in some cases an effusion of yellowish fluid, and the membranes had a faint tinge of yellowishness. In one case I found a remarkably dry state of the arachnoid. In one severe case there was a good deal of a substance resembling coffee grounds in the stomach, and the mucous membrane was soft and disorganised.

All the phenomena of this disease, the gastro-intestinal inflammation, the yellowness of skin, the enlargement and softening of the spleen, the rapid fatality and excessive prostration, seem to point out a strong analogy between it and the yellow fever of warm climates. In the writings of Rush and Lawrence, you will find that their description of the phenomena observed on dissection, would in a great degree answer for those of the cases which I have detailed. I may mention here, too, that in our cases the mortality was severe. We lost the first sixteen cases; and it was not until we fully ascertained the nature of the disease by dissection, that we began to save these patients. Then by free depletions, copious applications of leeches to the abdomen and the bold use of calomel and opium, we succeeded in a great number of cases. In some cases death took place in four, in others in six hours, in a few it was more prolonged. There is no epidemic on record in this city, in which the same symptoms and the same rapid fatality were observed.

With respect to the analogy between this disease and yellow fever, it appears that in the latter affection the yellow color depends upon the presence of bile in the blood. This is one point. Again from the most accurate descriptions which have been given of the morbid appearances of yellow fever, it appears that in the majority of cases the liver has been found healthy; here is another point. In yellow fever also, inflammation of the stomach, duodenum and intestines, is a matter of almost universal occurrence, as you will find by

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examining the works on yellow fever. In our cases we had all these circumstances; we had extreme tenderness of the epigastrium, and inflammation of the stomach, duodenum and intestines; and in one severe case we had black vomit. All these circumstances combined with the fatality, seem to prove that the cases which were under treatment in the Meath Hospital during the epidemic of 1826–27, bore a very striking resemblance to that species of fever which is supposed to exist only in warm climates. It is probable that if yellow fever should appear in temperate countries it would exhibit itself in the form of gastric fever, with some cases only of yellowness. Indeed it seems to be now very generally admitted that yellow fever has nothing peculiar in it;—that it is the maximum of bilious or gastric fevers. We find that in proportion as we approach the warm latitudes, the digestive mucous membrane appears to take on a greater susceptibility of disease. Between the tropics it would seem as if morbid actions were chiefly thrown upon the viscera of the abdomen. Europeans who have resided there for any length of time acquire a yellow tinge, and many of them suffer from intestinal and hepatic inflammations. If we go northward we find the case to be the reverse; as we approach the colder latitudes we find the mucous membrane of the digestive tube acquires a greater degree of tone and vigor, that it is less susceptible of disease, and can bear much greater stimulation. The inhabitants of warm climates use a large proportion of vegetable food, they seldom indulge in the use of animal food or spirits. The Hindoo lives on rice, the Arab on dates and milk. But if we go northerly, we find the natives habitually using stimulating food and drink with impunity; indeed, it is wonderful to think what vast quantities of flesh, animal oil, and other stimulants the stomach of an Esquimaux or a Kamskatkan will bear without injury. There is no doubt that warm climates predispose to inflammatory affections of the digestive apparatus, and this seems to connect yellow fever with the ordinary form of gastro-duodenitis accompanied with jaundice, or, in other words, a little more extent, a greater degree of intensity, and we may have the jaundice of this country converted into yellow fever. And it is fair to conclude that the *typhus icterodes* of temperate countries owes its danger not to the mere circumstance of jaundice existing, but to the greater degree of secondary gastro-enteritis which has produced that jaundice.

[*London Medical and Surgical Journal, March,* 1834.

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7. *Microscopical Experiments on Inflammation.*—From the result of the experiments of Dr. C. F. Koch and others upon the swimming bladder in frogs, it appears, 1st. That on the application of any irritant, a sensible acceleration in the movement of the blood, which circulates in this membrane and at the same time in the capillaries of the part affected, is perceived. 2nd. The movement subsides more or less promptly, this subsidence being particularly apparent after the action of energetic excitants, at which time the globules of blood are nearly in contact. 3rd. This movement of the globules is uniform in all the capillaries, save in the vicinity of large arteries, where, in consequence of the pulsation, there is an oscillation observable in them. 4th. Some isolated globules at first attach themselves to the walls of the vessels and cease to move; by degrees these globules become more numerous, form an opaque brown agglomeration, in which we can no longer recognise their form; insensibly the capillary vessels dilate in proportion, and sometimes acquire even double their volume. 5th. The number of the globules become opaque, and diminish in quantity, because they are dissolved in the serum, which they render of a red and transparent color. 6th. In the neighborhood of these vessels in which the blood has no longer any movement, we observe the different phenomena which are noticed in the three first experiments; at first, in the parts the nearest to these vessels the phenomena seen in the third experiment are observable; then, in the most remote parts, those of the second, and afterwards those of the first, conclusions are seen.—7th. The capillaries in which the passage of the globules is thus arrested,

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and in which the calibre is much dilated, return more or less quickly to their normal state. 8th. Incisions and punctures determine the stoppage and the dissolution of these globules in the serum. 9th. When the sanguineous globules are agglomerated and their motion is diminished, quick sharp movements or any other irritant, as that which alcohol, æther, or electricity can produce, applied to the thigh of an animal, will re-establish for an instant the natural motion in the progression of the globules; but if this inflammation be slight, the globules soon return to their previous state. In general, the impression of a new excitant exasperates the inflammatory reaction. 10th. The stoppage of the globules of the blood is the more prompt the more active the stimulus is. Their collection into a mass is thus in proportion to the dilatation of the capillaries. 11th. In severe and prolonged inflammatory affections the small arteries and veins are in the same condition as the capillary vessels.—*Meckel's Archiv. für Anatomié und Physiologié.—London Medical and Surgical Journal, March,* 1834.

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8. *Case of Vagitus Uterinus, before and after the Rupture of the Membranes.* By Dr. Heyfelder.*—Whether it is possible for a child in the womb to breathe and cry, is a question which has been variously mooted by medical men, but has never till now been set at rest. I confess I used always to think that the cases we have on record of vagitus uterinus previous to the rupture of the membranes, were all fabulous; for it is quite unaccountable how, under such circumstances, the air necessary for breathing and crying can reach the fœtus. This day, however (the 23d of September, 1833,) my scepticism has been completely removed by the following case:—

The wife of a dyer, of the name of Holdevied, living in Gorheim, near Siegmaringen, a stout, well made, healthy young woman, aged twenty-four, was in labor of her first child. The pains had lasted for forty-eight hours. On examination, I found the abdomen regularly and firmly distended; the extremities of the fœtus were perceptible above the navel, towards the pit of the stomach; the orifice of the uterus was open to the extent of three inches, but the membranes were neither protruded in the intervals of, nor during the pains, which were not strong nor frequent. Immediately behind the membranes, however, lay the face of the child, in which, with my finger, I could distinguish the eyelids, the nose, and the mouth. So little liquor amnii was there present, that I at first thought there was nothing between my finger and the features of the infant, and that the membranes must have been ruptured previously to my arrival; but upon further examining the lips, I found the presence of a foreign membrane, which prevented the entrance of my finger into the mouth: and I should add, that the mouth itself, as well as the other parts of the face, lay between the upper and middle apertures of the pelvis.

While making this observation, and particularly at the moment of touching the lips, I suddenly heard a noise—it was the cry as of a new-born child beginning to respire. All who were present, the midwife, the husband, and the patient herself, heard it as well as I did, and testified their great surprise. This occurred in the short interval between two pains. I now considered it advisable to rupture the membranes, and did so, with proper precaution, immediately over the mouth of the child: *some* water was discharged, and the same cry which was already heard was repeated, but it was much more distinct, and continued longer than before. We heard it also soon after, for the third time, and not less clearly. The forceps were presently applied, and I succeeded, not without some little difficulty, in bringing into the world a pretty strong living infant.

Such a presentation as that in the foregoing case, the parietes of the uterus not covering nor compressing the child's mouth, must be peculiarly favorable for the occurrence of vagitus uterinus—at least after the rupture of the membranes. And it would seem that such a phenomenon can only occur where the pains are weak, and the contractions of the uterus not considerable. But I shall not enter into any hypothesis to account for the occurrence of vagitus *before* the rupture of the membranes: I would only say, that it seems to be analogous to

* From the Medicinische Zeitung of Berlin.

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the chirping of the chick in the egg, first noticed by Mende, and too often attested since to be now gainsaid. And might not the deficiency of water between the membranes and the child's face, together with the peculiar presentation of the latter, have materially favored the vagitus in the case just related?—*London Medical Gazette, March*, 1834.

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9. *Hypertrophy of the bones of the Cranium, supposed to have followed Hydrocephalus.* By M. Andral.—In the month of February, 1832, a man aged sixty-five, of small stature, and lean, entered the hospital *de la Pitié*. The appearance of his cranium struck me at first sight. Before inquiring what cause had brought him into the hospital, I passed my hand several times over his head. Observing my curiosity, the old man smiled, and informed me, that from childhood his head was very large; that his mother made him on that account suitable head dresses, and that as long as he could remember, the size of his head was always considerable.

I questioned him on his vocation and manner of living. His answers were clear and distinct. His intelligence ordinary. Pursuing the calling of a *sweeper*, he had not been accustomed to much labor. He could neither read nor write. His physiognomy was expressive and variable. His eyes were sparkling and covered by a considerable jutting of the bone. In contrast with the size of his head, his lean and small features gave him a very singular look. His motions were made with entire freedom. He entered the hospital to be treated for asthma, from which he had long suffered. His appetite was good, and his functions were regularly performed. After being in the hospital six days, he died suddenly in a violent paroxysm of asthma.

Autopsy was made twenty-four hours after death. The heart and respiratory passages exhibited the cause of the patient's death. I will here only speak of what relates to his head, and his osseous system in general.

On opening the skull, the dura mater was easily separated from the bones. This membrane had experienced no change in its appearance or texture. The arachnoid and pia mater retained their ordinary transparency. At first sight the brain seemed to be flattened and of less size than usual. But when it was drawn forth from the fossæ in which it was buried, we soon found that an optical illusion had deceived us respecting its size; its numerous and small convolutions showed no trace of its being flattened, or of there having been any compression. The vertebral canal had preserved its calibre; the vertebrae and other bones of the skeleton were without derangement in their physical aspect; the bones of the cranium alone had experienced a remarkable growth.

There is a considerable prominence of the frontal portion of this cranium; the angle made by the coronol with the orbital portion is almost entirely effaced;—a phenomenon which is sufficient according to Camper to indicate hydrocephalus. The squamous portion of the os temporis is distorted outwards, and projects above the zygomatic apophysis. And the sutures on the upper part of the cranium have disappeared.

The bones at the base of the cranium anterior to the occipital foramen are but little altered, either in form or thickness. The basilary process, the petrous portion of the temporal bone, the body of the sphenoid, the æthmoid, have undergone only slight modifications, and the bones of the face are nearly of their ordinary size. On the other side the cranial cavity appears to be of its ordinary dimensions. The right portion of the base of the cranium appears at first sight to be more extended in its antero-posterior direction, but the left portion is larger.

A question occurs here: May we not ascertain from analogy the cause of such a large accumulation of phosphate of lime around the brain?

The subject of these remarks, it appears to me, had originally hydrocephalus; that form of the cranium which we may call *hydrocephalic* shews itself. I have had occasion to examine several very thick skulls; but in none of them was the anterior form changed; in some the thickness was only partial; and in all the internal table only was *hypertrophied*, the external having undergone no change in form or size.

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The hypothesis being admitted that hydrocephalus once existed, it remains to determine the seat of the serous collection. The effusion was not in the arachnoid cavity. This is proved by the perfect integrity of the brain and its ventricles. It must have existed then between the dura and pia mater. In its increase it would have compressed the brain on one side, and forced the sides of the cranium to extend gradually. The quantity of serosity remaining the same, the bones in their full development, would retain the vicious form which they had contracted. On the commencement of the absorption of the effusion, and in virtue of the law, that wherever there is a tendency to a vacuum in the economy, nature endeavors to fill it up, the brain on one side must have gradually recovered its size and form; but as the brain could not itself fill the large cavity which was formed, the internal table of the top of the skull was slowly charged with phosphate of lime, according to the progress of the absorption of the liquid,—and the deposite of the salt was at length arrested when its continuation would have produced compression.—*Revue Medicale, Oct.* 1833. J. F.

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10. *Phthisis in Monkeys and other animals.*—Dr. Reynaud, one of the most accurate of the French pathologists, lately read a memoir before the *Academy of Medicine*, Paris, on the tuberculous affection in monkeys, compared with the same affection in man. The following are the principal facts established by this interesting piece of comparative pathology:

1. Nearly all the quadrumana brought to Europe die tuberculous. This has been attributed to confinement and to change of climate; but till we know of what diseases they die in their wild state and in their native country, such opinions must remain conjectural.

2. The tuberculous disposition is more abundant, and at the same time is diffused through a greater number of organs, than in man.

3. The organs which the deposite affects are not the same. In the monkey it is generally found in the *kidneys*, the *spleen*, and the *liver;* often in the heart, very rarely in the mesenteric glands, or on the peritoneum—never in the small intestine. The reverse of this occurs in man. The lung is the most frequent seat of the disease in both; but in the monkey the spleen is affected to almost the same extent, and the tubercles soften with almost equal rapidity.

4. In all these respects the tuberculous affection in children forms a sort of intermediate link between the disease in the human adult, and in this family inferior to ourselves in the zoological scale.

The following facts will serve at once to illustrate, confirm, and limit these general principles.

Dr. Reynaud examined more than twenty monkeys that died at the Garden of Plants in Paris. All with one exception died phthisical. They had tubercles in the lungs; and likewise in several other organs. Fifteen cases of which he took notes, form the basis of his observations. The species examined were various; but neither this, nor sex, nor age, nor time of residence in Europe, influenced the uniformity of the lesion, which was constantly tuberculous.

In the fifteen cases one was not tuberculous; fourteen had tubercles in the lungs; in three they were confined to the lungs; in one they were extensively developed in these organs, while there were a few tuberculous points in the mesenteric glands. In the ten remaining cases, tubercles existed in several organs simultaneously. They were detected

In the kidneys	9	times.	Tubercles very small, superficial.
Spleen	8	—	
Liver	6	—	Tubercles generally numerous, small, superficial.
Heart	3	—	Never numerous, nor softened; small.
Under its Pericardium	4	—	
In the Mesenteric Glands	4	—	Only two or three tuberculous points and swollen glands.
Epiploon	3	—	Tubercles largely developed.
Peritoneum	1	—	Tubercular peritonitis; adhesions in many cases.

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Intestines	0	—	No ulcerations.
Pancreas	1	—	Tubercle in the centre, about the size of a nut.
Bladder	1	—	One very small tubercle.
Superrenal Capsule	1	—	Several tubercles.
Testicle	1	—	One small tubercle.
Uterus	1	—	Idem.
Cranium	1	—	Several tubercles in the diploe.

Dr. Reynaud had rarely an opportunity of examining the osseous or the nervous systems. The liver was fat (gros) in no instance; in man, on the contrary, this lesion occurred in 40 out of 120 cases observed by Louis. Pericarditis was met with in four of the cases; it was developed subsequently to the tubercles, and appeared to be regulated by the same laws as pleuritis in the phthisical.

The lungs were in several cases entirely or in part converted into tuberculous matter; none of the tissues remained; all had undergone the same transformation. Ulcerations were discovered twice in the larynx; never in the trachea or its two divisions. In man, ulcerations of these parts occur in the majority of cases. Louis attributed them to the inflammation excited by the matter expectorated. Now it is singular, that in the monkey the cough is always dry, and unaccompanied by expectoration.

The bronchial glands were always more or less implicated in the tuberculous affection. In one case their enlargement had completely obliterated the left bronchus, and thus obstructed respiration in the corresponding lung, which, as well as the side of thorax, was much contracted.

The spleen in two cases contained a few crude tubercles. In the six remaining cases it was completely stuffed with this morbid product, enlarged, deformed, and often adherent to the peritoneum. The blood in the cells formed reddish clots, in the midst of which were tuberculous points. Tubercles in various stages of development replaced the tissue of the organ; this deposite was sometimes contained in caverns lined with a false membrane. In one case the tubercles were isolated and crude in the lungs; in the spleen, on the contrary, they were large, and softened in the centre, thus constituting a true splenic phthisis.

Dr. Reynaud has made it highly probable that these alterations take place in the blood contained in the cells, and do not commence in the tissue of the spleen itself.

The stethoscope and percussion enable us to detect the changes which take place in the thorax of these animals, as the following short abstract of a case will show:

A Papion, aged about five years, in Europe eight months, coughed, and had dyspnœa. The left side of the chest was clear on percussion, the right was dull. The respiration on the left side was vesicular, mixed with râle; on the right it was cavernulous, silvery, and gurgling. There was cough, but no expectoration. The pulsations of the heart could scarcely be counted.

Inspection.—On the left side there was a recent effusion of blood, and *false* membranes in the pleura. Some crude and softened tubercles were found in the lung. The right lung contained a great number of tubercles isolated, and in irregular masses. One of the inferior lobes was converted into a large, purulent, tuberculous mass. The bronchial glands were enlarged and tuberculous. The *spleen* contained a great many tubercles in various stages of softening, and caverns of various sizes. The *liver* contained a few yellow crude tubercles. In the *kidneys* there were one or two. The *epiploon* was covered with little semi-transparent granulations. The *heart*, *pericardium*, *stomach*, and *intestines*, were healthy. The *mesenteric glands* unaltered.

According to Louis and Dr. Reynaud's calculations, the left lung is more frequently tuberculous than the right, and to a greater degree; females are more subject to phthisis than males—children than adults; and in the division of animals which approaches nearest to ourselves, tuberculization is at its maximum of frequency, extent, and diffusion. "Then," says Dr. R., "whether we consider

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man relatively to the lung apparently most disposed to tubercles, and belonging to that side of the body which, compared with the other, seems inferiorly developed;—whether we regard sex, age, or species,—tubercles follow one constant order in their development—that of organic degradation.—*London Lancet, April*, 1834.

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11. *Case of Disease in the Brain, suddenly producing total blindness.* By W. C. Clough, Esq. Surgeon, Tonbridge Wells.—On the 17th day of June, 1833, a youth named William Elliott, twelve years old, was brought to me by his parents, who stated, that on the preceding day, after having made a hearty dinner, he had suddenly become blind. Upon inquiry, I ascertained that this youth had at all times complained of a pain in his head, which on several occasions was exceedingly severe; his appetite, generally, was almost insatiable, and frequently after a full meal he was quite stupid, and would go to sleep, and remain in that state for a very considerable period. His disposition was peevish, and when at play with his brothers, or boys of his own age, he would, without the slightest provocation, become very quarrelsome. His intellects seemed below par; he was sulky; and would occasionally skulk away from his companions for several days together. He frequently had double vision, and, now and then, observed small bodies floating in the air. The glare of the sun, or any other luminous body, was extremely annoying to him. His memory was very defective. The pupils of both eyes were extraordinarily dilated; they did not present their usual circular appearance, but seemed at their uppermost parts a little indented. The eyes did not present their usual brilliant character, but the iris exhibited considerable vivacity. Upon questioning the little fellow, his answers were given with some hesitation, his utterance seemed impeded, and, in fact, he appeared half idiotic. He mentioned that he had great pain in the head, and a sensation of something rumbling within the brain. The power of moving the upper limbs was sensibly diminished, but nothing of this kind was observable in the lower extremities. The digestive organs seemed to have great power and activity. The pulse was full, though slow, and respiration appeared to be performed in a laborious manner.

Treatment.—He was immediately cupped on the nape of the neck, and some active aperient medicine was administered. On the next day the pulse had risen, was not so full, and his intellectual faculties were not so obscured. He was again cupped, and this operation was also repeated on the following day. Two grains of calomel and the sixth of a grain of tartarized antimony, were administered every six hours; blisters were applied behind the ears, and on the eighth day, still finding the circulation full, I bled him to the extent of fourteen ounces. Immediately after this bleeding he could distinguish the white parts of my dress, and also see the ground as he walked along the road; but I am sorry to add, that this favorable state only remained for two days; however, as the lad had experienced so much relief from the venesection, it was again had recourse to on the eleventh day, but with no good effect. A large blister was now placed on the nape of the neck, and this was kept open with savine ointment. The gums having become tender, the calomel was omitted, and three grains of the *hydrarg. c. creta* given every night at bed-time. The bowels were cleared, occasionally, by means of the black draught. At the end of three weeks the general state of the boy's health was decidedly improved, he was more lively and cheerful, better tempered, and happier in the society of his brothers; but he was still *blind.* A seton was now introduced at the nape of the neck, and emesis produced on alternate mornings, by means of a scruple of the powder of ipecacuanha. At the expiration of six weeks the boy's health remained good, but being convinced that there existed some organic lesion of the optic nerves, I stated my opinion to the parents, at the same time informing them that the loss of vision would, I feared, be permanent. However, as I very much desired to have the advice of Mr. Lawrence, I recommended that that gentleman should be consulted.

The boy was accordingly taken to London for the purpose. Mr. Lawrence saw him, and after a careful examination, declared that no treatment could do

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any good, as the optic nerves were in a state of disorganization. Before Mrs. Elliott left London, she was recommended to take her son to the Ophthalmic Infirmary in Moorfields, where he was seen by Mr. Tyrrell, and continued under his care for thirteen weeks. He was then brought home; his health had by that time suffered materially, and it was quite evident that he must soon sink. His head was enlarged, and he speedily took to his bed. After coming home he was admitted a patient of the Tonbridge Wells Dispensary. Gradually he got worse and worse, and about the middle of the month of February lost the use of his limbs; his senses gradually failed him; a considerable discharge of blood, having a very dark appearance, and a peculiarly offensive odour, issued from the mouth and nares.

He died on the seventh day of March last.

Post-mortem Examination.—The day after his death I obtained permission, after much opposition, to examine the brain. The head was exceedingly large, and upon removing the skull-cap, I found that about two ounces of fluid had been effused between it and the dura mater. The dura mater itself was, in several places, perfectly *ossified*, and on rubbing the fingers over those portions, the sensation produced was, as if they were passing over sand paper—the ossifications were so minute. The arachnoid membrane was opaque, but the pia mater presented its usual appearance. The right hemisphere of the brain was much larger than the left, and on laying open the lateral ventricles, *an immense tumor* presented itself. This was carefully detached, and on being placed in a pair of scales, was found to weigh thirteen ounces and a quarter. Its upper portion was rather hard and firm, but the under surface was soft.

The tumor appeared to have had its origin in the central portion of the right lateral ventricle, and was distinctly attached to the sheath of the thalamus nervi optici of that side. The thalami nervorum opticorum of both sides were completely destroyed; the invasting neurilemma alone being left. The other nerves of the brain were carefully examined, and, with the exception of the fifth pair, seemed in their natural state. I ought to state that the skull cap was so exceedingly thin and transparent, that any object might be readily observed through its walls, indeed, in many parts it was not thicker than the paper I am now writing upon. The cerebellum was in its natural state.

Remarks.—In a physiological point of view, this may be regarded as an extremely interesting and instructive case, as it proves very decidedly to what an amazing extent disease may advance without destroying life, even in so important an organ as the brain. From the constant and severe pain in the head, it would appear that this tumor must have been developed at or soon after birth; that in the early stages of the boy's life its growth was slow; and I apprehend that up to the month of June last, its size must have been very small; that it then underwent an increase of development, and attained its present magnitude during the last eight months of the boy's life. After the first bleeding from the arm, I was quite delighted to find the lad could see; but, as I have before mentioned, this improvement only continued for two days. This induced me to repeat the venesection. At three cuppings and two bleedings fifty-six ounces of blood were taken; and after this, it was really quite remarkable to observe the difference in the little fellow. From being stupid and heavy he became quite lively and intelligent, his appetite was not so ravenous, and his health was much improved in every respect. But the principal point was not attained, nor, indeed, was it possible to accomplish so desirable an object as the post-mortem examination clearly proved.

One circumstance, in this case, particularly struck me, namely, the activity of the iris. Sometimes its vivacity was astonishing. An explanation of this has, I believe, been suggested by Mr. Travers, on the supposition that the eye is sound, and the cause of the amaurosis remote, or external to it, the iris continuing to act by a sympathy independent of the brain. In his "Synopsis of the Diseases of the Eye," he observes, "in a case of circumscribed tumor, compress-

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ing the left optic nerve immediately behind the ganglion opticum, although the blindness was complete, the iris was active. In two young ladies, in whom the eyes, as in the former case, were perfect, and the blindness complete, the iris was even vivacious, and there was the strongest presumptive evidence, from the symptoms, that the amaurosis was in the cerebral portion of the nerve." Here it may be observed, that from the commencement of the affection, the symptoms clearly pointed out the brain as the suffering organ; consequently all my efforts were directed to that organ. Notwithstanding the antiphlogistic plan was followed up with the greatest promptitude, the tumor still continued to increase, and eventually the lad's life was sacrificed. Over such a case as this the medical man has no control; all he can do, is to palliate symptoms as they arise, in the best manner he can. The tumor I have forwarded to Mr. Lawrence, to be placed in the museum of *St. Bartholomew's Hospital.—London Lancet, April* 1834.

THERAPEUTICS.

12. *Observations on the efficacy of the distilled water of the leaves of the Cherry Laurel, (Prunus Lauro-Cerasus,) in Neuralgia.* By Dr. Lodovico Broglia Dal Persico.*—From the time that Dr. Brutti and after him M. Lombard and other practitioners, extolled the use of the aqueous solution of the cyanuret of potassium in neuralgias, I resolved to repeat and vary the experiments. The employment of this agent is so simple, its action so prompt and innocent, that it might be confided to the most inexperienced hands; but although there were not wanting occasions for its trial, it was not easy to procure the medicine. Reflecting on its composition, I thought that the sedative property it possesses very probably depends on the cyanogen it contains. I therefore substituted for it the distilled water of the leaves of the cherry laurel, which, Madden, Mortimer† and Brown had already used, and which Baylies‡ was the first to administer to man. The effects surpassed my expectations, and I soon afterwards published the results of my observations in the *Gazetta eclettica di farmacia-chimica ect., di Verona, No.* 16. Since then I have frequently repeated the use of the cherry laurel, and always with great advantage. This publication was made after reading in the *Bulletin gén. de thérap.* t. iii. for the year 1832, that M. Roux employed the distilled water of the cherry laurel in neuralgias, in preference to hydrocyanic acid. He administered it in this form:—

Distilled water of the cherry laurel ʒ iv.
Sulphuric ether ʒ i.
Extract of belladona 3 ij. mixed.

In this composition it is impossible to determine which article has most effect. It is of no importance, it may be said, provided it cures. But is there not some advantage in curing with equal success by the use of a more simple agent? The following cases enable the reader to appreciate my mode of treatment.

Case I. *Cervical Neuralgia.*—Anna Paccaguella, aged 33, of a sanguine and nervous temperament, liable to inflammation of the abdominal organs, was affected in April, 1832, with meningitis, which was successfully combatted with free and repeated bleedings. On the 14th day of the disease, all the symptoms were almost entirely removed, when suddenly there appeared without any assignable cause, an acute pain along the side and back of the neck,

* We find this article in the *Archives Generales* for Nov. 1833, translated from the *Annali Universali di Med.* for July, 1832. J. F.

† Bruschi, Instituzioni di Materia Medica, vol. 3.

‡ Sprengel, Hist. de la Med. t. v. 491.

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which increased in intensity for two hours. It diminished a little on the morning of the next day, and then re-appeared at irregular intervals in the course of the day, with extreme violence. The painful region exhibited no change in its appearance except a slight redness. The least pressure caused intolerable suffering; the pulse was not affected, it was not more frequent; the intellect was unimpaired and the digestive functions in a natural state. Every circumstance proved here the existence of a remittent and irregular cervical neuralgia. Bloodletting, leeching on the painful part, the acetate of morphia internally, and in solution as an external lotion, the extracts of valerian and henbane combined with the oxide of zinc, purgatives, mustard pediluvia, sinapisms on the inferior extremities were all without effect. A piece of cotton, dipped in a mixture of three drachms of the distilled water of the leaves of the cherry laurel with three ounces of citron water,* was applied for two hours on the painful part. From the first applications the pain was sensibly soothed; and after three days use of the same lotion the cure was completed.

Case II. *Femoro-popliteal Neuralgia.*—Elizabeth Bolpin, aged 21, of a sanguine and nervous temperament, had always enjoyed good health, when, in May, 1832, after being exposed while warm to cold, was seized suddenly with an excessively acute pain in the knee joint, which extended a little upwards along the anterior and internal part of the thigh, and below to the middle of the leg: at the end of two hours her suffering was excruciating; it then became a little more moderate; and it re-appeared in this way at intervals for twenty-four hours. Dr. Broglia saw the patient on the third day. She was then suffering the most acute pains, the painful region exhibiting no appreciable change. The least motion renewed the pains. The tongue was whitish, the pulse a little irregular, the intellect unimpaired.

After bleeding the patient, a purgative was given. On the fifth day there was a slight improvement, but in the evening the pains returned. She was bled again. A diaphoretic drink, frictions with an ammoniacal liniment and then with alcohol were used without benefit. Acupuncturation was performed without better success. Leeches on the seat of the pain did no good. No advantage was obtained from the internal use of turpentine. The distilled water of the leaves of the cherry laurel, in the proportion already mentioned and united with simple distilled water, was used. After several applications the patient experienced great relief, which gradually increased and in three days the neuralgia was completely dissipated.

Case III. *Sciatic Neuralgia.*—A lady was affected with spinal meningitis in June, 1832. She was exposed to a very cold wind while sweating. The symptoms were energetically treated by repeated bleedings, leeching along the spine, mild purgatives and diaphoretic drinks. On the seventh day the patient was convalescent. From the beginning of the attack, she had felt a very acute and almost constant pain at the external condyle of the femur; it extended to the thigh and leg. Friction with warm wool, ammoniacal liniments, and the extract of henbane were unavailing. On the evening of the eighth day the distilled water of the cherry laurel was employed, and the pain soon afterwards disappeared; but almost at the same time another similar pain occurred in the lumbar region, returning in violent paroxysms. This was treated as the first and with the same success. At the end of several days the patient was perfectly relieved.

Case IV. *Facial Neuralgia.*—Another lady, aged 32, of a sanguine temperament, was suddenly attacked without any known cause with a violent pain in the sub-orbital region of the left side. The pain soon extended along the cheek to the angle of the inferior maxilla. A partial remission took place in the evening, but the pain recurred every morning with increased acuteness. The patient was in a state of extreme agitation, with somnolency and sub-de-

* Dr. Broglia says rose water will answer very well instead of the citron water. The citron water is nothing more than an infusion of lemon peel.

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lirium. She was bled, a purgative was given, and the next day two applications of leeches were made on the painful region; pills of sulphate of quinine were at the same time exhibited. All this treatmemt was without effect. Dr. Broglia then used belladona both internally and in the form of lotion. It did not lessen the pain. The distilled water of the cherry laurel was then prescribed in the usual form; its effect was not immediate. After two days the patient obtained relief from it and recovered.

Case V. *Sub-orbital Neuralgia.*—A. Menin, was affected in September, 1832, with sub-orbital neuralgia, on the left side, of an irregular type. A purgative was first administered to remove a slight gastric irritation. Bleeding, mustard pediluvia, leeches over the painful region, a sinapism near the seat of the pain were used in vain. The sub-carbonate of iron was used internally several days without any more advantage. Lotions with the distilled water of the cherry laurel were then employed, and they rapidly removed all the symptoms. At the end of five days from their application the cure was complete.

Case VI. *Scapular Neuralgia, irregular and remittent.*—After having had a rheumatic affection of the thorax, F. Menighello, aged 23, of a sanguine and nervous temperament, was seized with a scapular neuralgia on the left side, its accessions being irregular and remittent. Bleeding, purgatives, soothing frictions, leeches, alcoholic lotions, topical irritants,—the sulphate of quinine alone, and combined with anti-spasmodics,—refrigerent applications did not produce the least amelioration. The sub-carbonate of iron, acupuncturation, the wine of colchicum were equally inefficacious. At length, repeated lotions with the cherry laurel water removed entirely all the symptoms after several days.

Case VII. *Sciatic Neuralgia.*—In November, 1832, Biagio Urbani, aged 24, of sanguine temperament, felt an excessively acute pain along the course of the left sciatic nerve. The accessions were irregular and attended from time to time with a remission. He had experienced a similar attack the preceding year, but with a little less intensity. It yielded to opiaceous frictions which were advised by Professor Brera. On this occasion, Dr. Broglia, encouraged by the success he had obtained from lotions with the cherry laurel, prescribed its use. The first applications had no effect: but after forty-eight hours the patient was surprised to find himself cured.

Case VIII. *Cubital Neuralgia.*—D. Voltan was affected with a cubital neuralgia on the left side, after having had a grave pneumonia which had been happily treated by bleedings. This neuralgia was not very acute; it was intermittent, re-appearing every evening. Leeches, quinquina, sulphate of quinine failed to remove it. Lotions with the cherry laurel water calmed the pain, and this effect was followed by a numbness, a sort of torpor; on the seventh day there remained no trace of it.

Case IX. *Sub-orbital Neuralgia.*—M. Gaetano Zangrandi, an eminent physician, made use on my recommendation of the cherry laurel water in sub-orbital neuralgia of the right side. It was developed in November, 1832, in a lady living in Padua, after she had had a rheumatic opthalmia. Half an ounce of the cherry laurel water, mixed with four ounces of simple distilled water, effected a perfect cure in a few days.

It is an important fact that in all these cases which have been reported, there has been no relapse since this treatment. In the midst of these examples of success, we shall give two cases in which this remedy had no effect, notwithstanding it was used in augmented doses.

Case X. Oswaldo Savioli, of a lymphatic temperament, was affected with sciatic neuralgia on the right side, in August, 1832. He had before experienced several similar attacks which yielded to bleedings and vesicatories. At this time two bleedings were practiced, a great number of leeches were applied along the course of the pain; frequent frictions, alcoholics, and purgatives were successively used without advantage, also the oil of turpentine internally. Lotions with the cherry laurel water were then tried, but were not attended with any change in the intensity of the pain. It yielded only to the

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application of two vesicatories, one behind the great trochanter; the other on the dorsal region of the foot on the affected side.

Case XI.—In the second case, also, in which the cherry laurel water was unavailing, the neuralgia was sciatic. The same measures were here resorted to without producing any alleviation. Vesicatories were applied, and they alone deserved the honor of curing.

Dr. Broglia then makes some remarks on the nature of neuralgias, in support of the opinions advanced by many authors. He inquires also into the mode of the action of the distilled water of the cherry laurel, and then terminates with the following conclusions:

1. This curative method is the most simple.
2. It is of the most easy application.
3. It cannot give rise to any bad symptom.
4. We can appreciate with much certainty its therapeutic effects, as only one medicine forms its basis.
5. It is very economical and may therefore be used by all classes of patients.
6. The preparation may be procured in any apothecary's shop.
7. Its action is efficacious in most cases, and the cure effected by it, is exempt from relapses.*

Note by the French translator.

* The opinion of Dr. Broglia Dal Persico appears a little exclusive, although it is founded on conclusive facts. We believe the efficacy of the distilled water of the cherry laurel is not so constant as would appear from the examples given by this physician; our experience, at least, leads us to doubt. Our *confrère* should have mentioned with more precision the nature of the distilled water of the cherry laurel which he employs. Is it that which contains suspended, the essential oil, produced by distillation; or that which is filtered to separate the oil? Every one knows that the strength of the distilled water in the first case, is greater than when the oil is separated by filtration. But if the therapeutic action of this agent depends on its concentration, it is possible that the distilled water of the leaves of the cherry laurel of our climate, has not, in equal doses, the same strength as that of the leaves of the same tree in a warmer country. Perhaps, with us, it would be expedient to employ, not the water of a second distillation, we mean, the distilled water, but the water distilled a third and even a fourth time—that is to say, the *re-distilled water of the leaves of the cherry laurel,* containing the essential oil.

Note by the American translator.

The disease which has received so much attention from Dr. Broglia, is one of so painful a nature as to make every new and plausible suggestion about its treatment highly interesting. We fear, however, the French commentator is not wrong in charging Dr. B's opinion with being *a little exclusive.* If out of every eleven cases of such violent neuralgia as are described by the Italian writer, the cherry laurel water is bona fide competent to cure nine, as he declares to have been his experience, it must certainly be the most wonderful and valuable remedy in modern materia medica.

It may be urged as a fair objection to the apparently conclusive facts mentioned by Dr. Broglia, that, except in two cases, other general and local measures were practiced before the cherry laurel water was prescribed. Were these measures hurtful or beneficial? It is impossible to say, from any thing in Dr. B's account. He does not analyse their effects. In several of the cases even his favorite remedy is acknowledged to have been followed by no appreciable advantage on the first applications; and sometimes several days elapsed before its happy effects were displayed. Possibly all his cases might have recovered under his preliminary treatment, if it had not been pushed to an extreme, as was probably done in a few of the examples, and had he exercised a little more patience. But he did not wait as patiently to see the result of his first treatment, as to find occasion for a favorable conclusion respecting

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the virtues of the cherry laurel water. We once saw a violent neuralgia of the scalp greatly augmented under the moderate operation of pills of the compound extract of colocynth and a small portion of calomel, although the use of a purgative was clearly indicated. Paleness of the skin and weakness of the pulse during the increased intensity of the pain, led us to recommend a large draught of warm wine whey. It immediately quickened the circulation and gave rise to a pleasant warmth and moisture of the surface. In a few minutes the pain abated, and in less than an hour the patient fell asleep, and afterwards awoke almost entirely exempt from pain. Did the wine whey in this case deserve all the credit of relieving the patient? According to Dr. B's mode of reasoning it did:—a mode of reasoning which is altogether fallacious.

Is it not quite probable, that the want of success in the experiments made by the French editor, depended more upon his use of the cherry laurel water alone to the neglect of Dr. Broglia's other treatment, than to the difference in the properties of the plant cultivated in the different climates of France and Italy?

We have not been able to find any records of the use of the cherry laurel, in any form of preparation, by American physicians. In this country, as in Europe, the plant is an exotic. It is sometimes cultivated in the green house for the beauty of its shining evergreen foliage; but we have heard of its growing no where in the open air in the United States, except in South Carolina. We learn from Professor Geddings, that during his residence in Charleston, S. C. he made a tincture of its leaves and used it advantageously in chronic bronchitis, phthisis pulmonalis, asthma, and in some affections of the stomach, attended with exalted susceptibility of that organ.

We hope the cases reported by Dr. Broglia, will induce some of our brethren in the south, to make trials of the virtues of the distilled water of the leaves of the cherry laurel, and report the results. It is not improbable that it may be found a valuable auxiliary to other therapeutic agents, in the treatment of neuralgia. Let all who engage in the investigation be encouraged by the prophetic saying of the venerated Cullen,*—*the medicinal virtues of the Lauroceranus will hereafter be ascertained in the hands of a future* Storck! J. F.

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13. *Salicine as a febrifuge.*—This new medicine proposed in France, by M. Leroux, in Germany by Buchner, in Italy, by Rigatelli, has already been the subject of many experiments in the Parisian Hospitals. M. Andral, at la Pitié, M. Bally, at Hotel Dieu, M. Chomel, at la Charité, have given it particular attention. Dr. G. Richelot, in an essay on the febrifuge properties of salicine, in the *Archives Générales de Médecine*, for September, 1833, draws the following conclusions from an examination of the results of the practice of these physicians and several authors besides.

1. Salicine appears to possess febrifuge properties. But these properties are of little energy and are not comparable with those of sulphate of quinine.

2. Salicine may be given with advantage in cases where quinine would fail, in cases where abdominal irritation contra-indicates the use of sulphate of quinine, and particularly in hectic fevers attended with diarrhœa.

3. The most convenient dose is from six to eight grains given in the apyrexia. The dose may afterwards be gradually augmented with care. This mode of administration seems preferable to resorting at first to very large doses.

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14. *Herpes of the face cured*, by Dr. Baumbach.—Madame W——, had been affected for thirteen years with an obstinate herpetic eruption of the face, which rebelled against all treatment. Dr. Baumbach confined her, for four weeks, to a diet consisting merely of four ounces of bread, an ounce and a half of groats, and a pint of milk daily. This, together with a saline and alkaline bath, and the use of guiaicum, effected a perfect cure.

[*Journal fur Practische Heilkunde, Aug.* 1833.

* Mat. Med. Quar. ed. 1789, vol. ii. p. 287.

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15. *Herpes Phlyctenoides successfully treated by cups to the back*, by Dr. Strohmayer.—An officer informed Dr. Strohmayer, that he was subject, every summer, between the first of June and the end of September, to an acute pricking eruption on the skin, for the relief of which a variety of remedies and baths had been prescribed, even by the physicians of Vienna, without any benefit. This eruption was found to be the *herpes phlyctenoides*, which presented an obstinate character, and occupied the abdomen as well as the hands and feet. It was precisely similar to an affection of a peasant in Wurtemburg, which Dr. Strohmayer had seen rapidly cured a few years before, by a common quack, by the application of cups to the back, and the use of the cold bath. He, therefore, determined to try the effects of the cups in the individual who consulted him. Two cups were accordingly applied to the back, and the patient was directed to take a powder composed of the æthiops antimonii and magnesia, and to drink a decoction of the dulcamara. Under the employment of these remedies, aided by the warm bath holding rock salt in solution, and occasionally oak bark, and a low diet, the disease was effectually removed in eight days, and did not recur.—*Strohmayer's Medicinisch Practische Darstellung, &c.* 1831.

Dr. Strohmayer represents that he had succeeded in effecting a cure of a very obstinate case of herpes by inserting into the part six punctures with the point of a lancet imbued with the vaccine virus. These vaccinations were practised in the periphery of the eruption. The patient was at the same time put upon low diet, the sulphur bath, pulv. plumeri cum magnesia, and the decoct. dulcamara. In issue was also established. He knew a similar affection cured by the application of a blistering plaster, the surface being kept for some time in a state of suppuration.—*Ib.*

16. *Neuralgia of the Face cured by warm Water.*—In Hufeland's Journal for September, there are three cases of neuralgia of the face reported, which were cured by the application of compresses dipped in hot water, to the part. The disease had been of long standing, and had been perseveringly submitted to treatment by narcotics, the carbonate of iron and various other remedies, without any permanent benefit. In one case, a small stream of cold water was allowed to fall upon the part from the pipe of a common syringe, but the sufferings of the patient were exasperated. This induced Dr. Mombert to resort to the application of hot water, which he employed by means of compresses, and the relief was instantaneous. In another case the warm water did not effect a perfect cure, but it produced so great a mitigation of the malady, that a cure was afterwards accomplished by the use of the sulphur bath.

17. *Case in which Coffee acted as an Anodyne.*—A female, aged 43, who suffered much from hysteria and a gouty diathesis, could not obtain sleep from any remedy to which she resorted, not even from opium in very large doses. Coffee, however, always had the desired effect in putting her to sleep. This peculiarity of idiosyncrasy only continued for one year, at the end of which time, her system became so far changed, that she was affected by opium in the manner that it influences other individuals.—*Strohmayer's Medicinisch Practische Darstellung.*

Dr. Strohmayer also remarks, that he was acquainted with the daughter of a Burger, with whom opium always acted as a cathartic, and the wife of an officer, with whom coffee acted as an emetic.—*Ib.*

18. *Case of Perversion of Appetite.*—An officer effected with phthisis presented a singular perversion of appetite and of the digestive function. He subsisted, even when greatly emaciated, upon snails, the toughest beef, and hard dry bread, made of corn meal, all of which he eat with peculiar relish, and in great quantity, while the most digestible articles, as fowls, veal, &c. and fruit either fresh or cooked, always occasioned great oppression and violent spasm of the stomach.—*Strohmayer Med. Prackt. Darstellung.*

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19. *Treatment of Gonorrhœa,* by Dr. PITSCHAFT.—The treatment of gonorrhœa must be a little varied, according to the stage and complications of the disease. Under ordinary circumstances, the following prescription may be administered.

℞.—Aqua Menth. pip. ℥ iv.
Terebinth. Venet. ʒ i.—3 ss.
Mucilag. Gum. Arab. q. s.
Ut fiat emuls. cui. adde
Aqua Amygd. amar. 3 iss.
Syrup. emuls. ℥ ss.
S. A table spoonful every hour.

When the patient is of a very irritable temperament, the following form is employed.

℞.—Herb. Hyoscyam. 3 ss.
F. infus. aquos. fervid. colat ℥ vi.
Adde terebinth. venet. 3 ss.
Mucilag. Gum. Arab. q. s. ut ft. emuls.
Cui. adde Syrup, ℥ i.
To be taken as above.

Should the glandular system suffer, or the testicles become tender and painful,—should the individual have suffered previously from gonorrhœa, or be of a scrofulous habit, the following must be employed.

℞.—Herb. Cicutæ, ʒ j. ft. infus. aquos. fervid.
Colat. ℥ iv.
Adde Terebinth. venet. ʒ— 3 ss.
Mucilag. Gum. Arab. q. s. ut ft. emuls.
Cui. adde Aqua Amygd. amar. 3 i.
Syrup cinnam, ℥ i.
Dose as above.

All heating and indigestible articles of food must be avoided. The drink of the patient should consist of water, or sugar and water; seltzer water with whey, light beer or almond emulsion. The parts should be supported by a suspensory bandage, and the warm bath will hasten the cure. Much advantage will also be secured by confinement to bed. Dr. Pitschaft remarks, that he has generally found that from four to six such mixtures were sufficient to effect a radical cure. Where the bowels are confined, he administers a mild aperient. The same treatment is equally efficacious in the female, but in those who are of an irritable temperament, the turpentine must be more sparingly used.—*Journal der Practtisch. Heilkunde, May,* 1833.

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20. *Treatment of Croup,* by Dr. GRAHL. Dr. Grahl remarks, that after being foiled in the treatment of croup by the ordinary means, he has found in the warm bath a certain and prompt remedy for that formidable disease. The bath should be repeated every hour, or every half hour, and the child kept in it from ten to fifteen minutes each time.

He subjoins, that after the first or second bath, the child generally begins to sneeze, and the nostrils, which like the whole of the air passages, are dry in croup, become moist and pour out a mucous discharge, the respiration becomes freer; the metallic clangor of the cough gradually disappears, and frequently in the course of an hour, the patient is perfectly restored.—*Journal der Practtisch Heilkunde, Oct.* 1833.

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21. *Prurigo of the vulva—mercurial injections.*—Women are often subject to a most grievous incommodity, an intolerable itching of the vulva, sometimes appearing periodically towards the evening. This infirmity is more frequent than it is generally thought to be; a feeling of modesty preventing most women from entrusting to their physician the secret of a malady which

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offers nothing serious. But the affection, commonly transitory, is sometimes so persevering and so insupportable, that the patients are ready to make any sacrifice rather than endure it longer.

I have known females whom this prurigo had compelled to forego society; others in whom it excited a venereal orgasm, which verged on nymphomania; and others, young and modest girls, in whom it awakened lascivious sensations, and gave rise to solitary habits, which nature and morality alike condemn.

It is consequently of some importance to the physician to possess the remedy of an indisposition which, in itself so trivial, may give rise to many painful results. The means generally put in use, and we all know with how little success, consist in body baths, hip baths, emollient lotions, general and local bleedings, narcotic and sulphurous injections, etc. Analogy had already led me to employ in these cases an alkaline solution of sub-carbonate of potash or soda, and I had often procured favorable results; but sometimes also my expectations were deceived, and insuccess compelled me to have recourse to another topic, which since have never failed me; I mean mercurial injections.

A lady, aged thirty, had for the last seven years been tormented with an insupportable itching of the vulva; the infirmity used to last six or seven days at a time, and returned with every menstrual discharge. The patient had sought relief at the highest and most recommendable medical sources; and the most attentive cares had brought no modification to her condition: baths, narcotic injections, sulphurous lotions, low diet, sanguine emissions, perhaps exaggerated, had given no relief. In the month of March, 1833, she consulted me; I prescribed some alkaline injections, and the disease entirely disappeared: the prurigo had yielded on the second day of the treatment, but reappeared, though with diminished intensity, some six weeks afterwards, and was no longer to be modified by the alkaline injections. I then had recourse to the following solution:—muriate of mercury (corros. subl.,) two drachms; alkohol, q. s. to dissolve the salt; distilled water, ten ounces: a tea-spoonful at first, and subsequently one, two, three table-spoonfuls of the above solution were to be diluted with one pound of warm water, and the parts were to be washed, and injections made, three or four times a-day, with the mixture. It is essential that at each injection the syringe should be several times replenished. The prurigo pudendi yielded to the first application of the topic, and has never since reappeared; and an affection which had lasted seven years, and had resisted almost every known medication, was overcome in the space of a few hours. For a week the injections were continued three times a-day, and were then practised only once in twenty-four hours till the return of the catamenia: at that period they were repeated, morning and noon, till the disappearance of the flux; two days afterwards they were completely dropped, to be resumed the next menstrual discharge. Since then the patient is in the habit of taking two or three injections at every menstrual period, as a prophylactic means, for no symptoms indicate the probable return of the affection.

Several times since, and in analogous circumstances, I have found mercurial lotions and injections effect a complete cure with surprising rapidity, whatever may have been the origin or the previous duration of the affection.

In our following number we will indicate the precious resources which baths and lotions of sublimate offer in many chronic diseases of the skin, be they or be they not syphilitic in their origin, and we shall attempt to prove by numerous cases that a medication, in all appearance rash, does not, when prudently handled, give rise to more serious accidents than the internal exhibition of small doses of calomel.

[*Monthly Journal of Medico-Chirurgical Knowledge.*

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22. *Intermittent melœna—cinchona.* By A. Trousseau.—A young man, aged 22, entered the Hotel Dieu in the course of September, 1833. He generally enjoyed good health, and had never suffered from affections of the intestinal canal. Four days previous to his entry into the hospital, he experienced a chilly sensation with vomituritions and slight colics; he went to the water-closet, vomited an enormous quantity of black matter and fainted. When re-

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turned to his senses he went to bed, and the vomitings did not reappear throughout the whole day. On the morrow, about twelve, another chilly fit came on him, and was immediately followed by a black vomit which was evaluated at four quarts; during the course of the night he had several stools likewise black; and he entered the hospital at eleven o'clock the following day. Our visit was ended, and we consequently did not examine him that day; at one o'clock he again felt chilly, and almost immediately threw up about five pounds of black matter, viscous, of the consistency of liquid tar, and quite identic with the matter vomited in the yellow fever, (*vomito nigro.*) The most remarkable feature of the affection was that a vomiturition of purely bilious matter preceded and followed the black vomit, bilious vomitings which endured the whole twenty-four hours. In the night the patient evacuated by stool six or eight pounds of matter similar to that which he had vomited.

I saw him at seven o'clock in the morning. He was frightfully pale and so enfeebled that the slightest motion was difficult; the pulse was soft and frequent—nausea, incessant vomiturition, greenish, and exhaling a bilious odour. Belly, yielding and indolent; the liver, the spleen, the stomach offered to palpation nothing anormal. The epigastrium became highly painful a few minutes previous to the black vomit.

It seemed evident that a new hæmorrhage would be fatal; the three evacuations, which had already taken place, had succeeded each other every twenty four hours, and the last had been more abundant than the first. It appeared to us that the intermittence and the periodicity were the principal features of the affection, and that we were, cost what it would, to alter that special modification of the organism which, at stated periods and then only, caused such an enormous effusion of blood into the intestinal canal. It appeared to us that we had to deal with an intermittent, hæmorrhagic, pernicious fever, and that idea guided us in our meditation; we nevertheless thought it requisite to place, at the same time, in contact with the gastro-intestinal mucous membrane a therapeutic agent, capable of producing a powerful constriction. Our prescription was the following: a potion containing thirty grains of sulphate of quinine, and one grain of thebaic extract in six ounces of water—an enema composed of a decoction of bark and ten drops of laudanum (Sydenham.) Three effervescent draughts strongly acidulated—iced water for drink.

At nine o'clock one half of the potion had been ingested; at eleven the patient vomited about half-a-pound of blood at most: the nausea persisted, and the night stools remained black. On the following morning the nausea still continued, and some bilious vomiturition had taken place; the same treatment was prescribed and continued for the four following days, but the melæna had entirely disappeared; the sickly sensation passed away in a couple of days, and the convalescence was not arrested by a single accident. The patient left the hospital in the beginning of October perfectly cured.

Synopsis.—Melæna returning periodically—exhibition of a large dose of quinine two hours before the presumed return of the fourth paroxysm—incomplete fit—continuation of the treatment—cessation of all accidents.

We thought the patient attacked by an hæmorrhagic pernicious fever, and we had recourse to bark; our cure was immediate and we have some reasons to think that our medication was not entirely useless. We must nevertheless observe that the most formidable hæmatemeses will sometimes disappear spontaneously after several days duration, and that consequently it is forbidden us rigorously to conclude from the medication to the curation, as we might have done had we had to deal with a comatose pernicious fever affecting a tertian or quartan type.

This is the second time that I have witnessed a quotician intermittent hæmatemesis, and the issue of the malady was, in the first case, so rapidly mortal, that I could not take upon me to remain spectator in the second. A young soldier had entered the hospital of Tours to be cured of a double tertian ague which offered no serious symptoms. Eight days passed on without accidents, and indeed without medication, when one day, at ten in the morning, a violent shivering supervened, during which the patient vomited about

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two pounds of blood; the hot stage and a copious perspiration completed the paroxysm. On the following morning a little weakness alone remained, and nothing foreboded a new hæmorrhage, when, at the same hour as on the preceding day, a still more violent paroxysm seized on the patient, and an evacuation by the mouth in the cold stage of about six pounds of blood, threw him into a lamentable state of prostration. Dr. Bretonneau, who was on service, saw the patient the following morning only, and as he thought he recognised the feature of an hæmorrhagic pernicious fever, he prescribed thirty grains of sulphate of quinine. The medicament was not exhibited ere a third fit acceded; an abundant vomit of blood supervened, in the midst of which life was extinguished. At the *post mortem* examination it was impossible to establish the slightest lesion of the gastro-intestinal mucous membrane.

This useful antecedent was fresh in my memory when the second patient was entrusted to my care, and the progressive intensity of the symptoms, their strange periodicity made me forebode a similar termination.

I have, in my ward at the Hotel Dieu, one other case of melæna of a much less serious nature. A woman, aged 55, entered the hospital with a black vomit which, for the last fortnight, returned several times a day. A fortnight ago, her catamenia then flowing, she had exposed herself to sudden cold; the menstrual flux had been immediately stopped, and a few hours afterwards the black vomit had appeared. When I saw the patient she was much enfeebled; the vomited matter was pitch-black, a viscid mucus in which were suspended a multitude of black dots similar to coffee-dregs; I merely prescribed a sulphuric lemonade and an enema of ratany-decoction. In the course of the day the vomiting ceased and did not reappear. I must add that an attentive exploration of the abdominal viscera did not discover any lesion to which the black vomit could be attributed.—*Ib.*

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23. *Experiments upon the Créosote, or the Immediate Principle of Tar.* By M. Coster.—We find, says the author, in an English work written long back by Berkley, more than five hundred cures obtained by the use of tar water. He stated that if any medicine was entitled to be called a specific it was this. Aware of the exaggerated description of Berkley, and his singular way of explaining the operations of this remedy, M. Coster thinks that still it ought not to be rejected as entirely useless, and expresses his astonishment that a medicine once esteemed so valuable, should have fallen into such complete discredit. For the last year and a half he has employed the tar water in a great number of varied cases, and amongst other diseases, states that nothing has proved of more efficacy during the convalescence of cholera. Soon after the observations on créosote by M. Reichenbach, M. Coster determined to make trial of it in some cases, and the following is the result of his researches into its merits.

1st. In a case of chronic inflammation of the free border of the eye-lids, accompanied in many places with little suppurating ulcers, he touched the parts with an aqueous solution of créosote (made by adding 12 drops of this substance to 2 ounces of water,) twice in the day: the disease had existed for many years, but after the application of this solution for ten days, the cure was complete.

2d. In seven cases of violent toothache, in which the teeth were all carious, the créosote caused the instantaneous cessation of the pain, and arrested the progress of the disease in the teeth.

3rd. An injection of an extremely diluted solution, was made into an abscess of long standing, which communicated with the coxo-femoral articulation, in a young child; at first acute pains were produced, but in the course of an hour they had completely ceased. The remedy was applied daily, and with such decided benefit, that the child, who before could not even move in bed, now sat up, without suffering any pain.

4th. He next employed the créosote in a young girl affected with lepra. The disease had not only attacked the exterior of the body, which was thereby much altered, but the interior of the mouth was covered with fœted ulcerations, the respiration hoarse, and this girl appeared to be menaced with suffocation;

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the créosote is now being administered both internally and externally, and appear, as far as the case has hitherto proceeded, to be attended with much benefit. [*Gazette des Hôpitaux.—Lond. Med. and Surgical Journal.*

24. *New Composition for Issue Peas.*—M. Frigerio has communicated to the Academy of Medicine a notice of a new kind of issue peas, composed of resin, powdered mezereon, marshmallow, and orris root, which can be moulded to any size, and made more or less active in their composition, according so circumstances. They excite a more regular and abundant discharge, without causing the pain and inflammation that frequently arises from the swelling of peas made of the root of the iris.—*Lond. Med. and Surg. Journal.*

25. *New Method of employing Spirit of Mezereon.*—M. Leroux thinks that the employment of this substance is more easy, and its results quicker and more certain, if the extract is dissolved in a solution of soap and alcohol. A combination which enters the skin more easily is the result. The part is to be rubbed with a flannel, soaked in this liniment; in six or eight hours a number of small pimples appear; but it is necessary to rub the part two or three times, and cover it with flannel. It has been frequently employed with success in acute rheumatism, and some affections of the stomach attended with vomiting, and even in whooping-cough. It is much more active and less painful than the tartarised antimony ointment.—*Ibid.*

26. *Treatment of Leprous Eruptions.* Henry Stevens, aged 22, was admitted into the Derby Infirmary on December 23, 1833, under the care of Dr. Bent. Fourteen months ago he first became affected with leprous eruption, which now extends over the greater part of his body and limbs. His legs and arms are, however, most covered with patches; which are red, distinct, and chiefly circular in form, none exceeding the dimensions of half a crown, and the greater part being very much less. They are a little raised above the level of the surrounding skin, and covered with dry scales; health in other respects good. About three or four months previous to his present admission, he was discharged from the hospital, after having been nine or ten weeks under treatment without obtaining any manifest advantage, although various remedies, very judiciously applied by another practitioner, had been had recourse to: of these, the chief were the steam bath, calomel and antimony, tincture of iodine, decoction of sarsaparilla, with oxymuriate of mercury; bleeding, the sulphur vapour-bath, and the warm-bath.

December 23d.—The vapour-bath was directed, chiefly with a view to soften and remove the scales, and the following ointment was applied to the left arm, night and morning.

℞ Hydriodat. Potassæ, 3 ss.; Iodinæ, gr. iv.; Cerat. Cetacei, ʒ ij. ft. ung.

26.—The empl. hydrargyri, spread on calico, was now applied in strips to the right arm, from the hand to the shoulder, and to the whole of both legs and thighs; the iodine ointment being continued of increased strength (Hydr. Potass. 3 j., Iodinæ, gr. vj.), with a view of observing the comparative efficiency of the two applications.

31st.—The left arm, to which the ointment was used, had undergone no change; but when the strips of plaister were removed from the other parts, improvement was very observable.

Treatment continued. January 8th,—No change in the left arm; other parts continue to improve. Omit the ointment, and let the left arm be now covered with plaisters, as well as the other limbs.

Hab. Liquor. Potassæ, 3 j, ter die ex aquâ.

23d.—The same treatment was persisted in till to-day, when his gums were become very sore and his mouth inflamed. The patches of eruption had a greatly improved appearance; no elevation or scaliness could be seen, and the surface had a smooth healthy character. Owing to the state of his mouth, the empl. hydr. was now omitted, and the following ointment substituted in lieu of it.

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℞ Ung. Picis; Ung Sulphur.; Cerati Plumbi superacet. aa. ʒ j. ft. ung. quo illinantur partes affectæ omni nocte maneque.

His bowels being griped, tinct. camph. com. was added to the liquor potassæ, and a gargle containing chlor. sodæ was used for his mouth.

27th.—Mouth continues sore; eruption going on well.

February 10th.—Eruption has nearly disappeared. Behind the neck and upon the shoulders were many small tubercles. of the kind occuring in acne; to which he had been liable a long time. To relieve this, the following lotion was applied twice daily.

℞ Hydr. Oxymur. gr. viij.; Sp. Vin. rect. ʒ iv.; Aqua Fontis, ʒ xij. ft. lotio.

17th.—The leprous eruption has now disappeared. He was directed to use the vapour-bath, and all other remedies were omitted, except the lotion to the neck and shoulders.

20th.—Is free from complaint.

24th.—Discharged cured.

Although, in the foregoing case, the treatment was not limited solely to the employment of the mercurial plaisters, there is no doubt the other remedies acted a very subordinate part, and the cure must be attributed mainly to them. His diet during the time did not deviate from the ordinary allowance of the house. It may be well to state, that in the use of this application some management is requisite. In Stevens' case, though continued for several days together without removal, the plaisters never excited too much, or irritated either the healthy or diseased portions of the skin; but in some instances it is otherwise. After three or four days, the parts begin to tingle, become inflamed, and a small papular eruption shews itself. When this happens, the mercurial strips should be removed, and their place supplied for a day or two with simple diachylon; to be succeeded again by the empl. hydr. and so on, alternating them, as circumstances may indicate. Some parts about the nates and back were not covered with the plaisters, and underwent no change in appearance till after the patches on the limbs had undergone considerable amendment. Afterwards, and particularly when the mouth became mercurialized, they gradually vanished.—*Lond. Med. Gazette, April*, 1834.

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27. *Treatment of Vascular Nævus*, by Charles Hickman—Case.—G. M. a child about two years old, was brought to me with a vascular nævus situated on the cheek about half an inch below, and to the outer angle of the eye; it was rather bigger than a sixpence.

I directed the mother, who was a dress-maker, carefully to rub in every night, a liniment composed of one drachm of the *tartarised antimony* to one ounce of *olive oil*, and when pustules appeared, to poultice the part until it healed. She continued this plan (alternately applying the liniment and the poultice) for the space of three or four months, at the end of which time nothing but a *white scar*, or cicatrix was to be seen, which, in reality, did not at all disfigure the child. The mother thought that previous to her application to me, the nævus was getting larger. Of course this plan would not do for a nævus situated on the eyelid or tongue.—*London Lancet, April*, 1834.

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28. *Therapeutic properties of Codeine.*—This new alkaline substance has been recently obtained from opium by M. Robiquet, and its therapeutic effects have been studied at Amiens by M. Barbier, surgeon to the *Hôtel Dieu* of Amiens, who communicated some observations on them to a late sitting of the *Royal Academy of Medicine*. These efforts seem to establish the chemical speciality of codeine, differing as they evidently do from either opium or morphine. The codeine was administered in the dose of one or two grains. Like opium and all medicinal substances derived from that drug, codeine operates on the nervous system, but its medical influence seems very small on the brain; it makes no impression whatever on the spinal marrow or nerves derived from it, and its whole activity seems to be exhausted on the nervous plexus of the great sympathetic. Thus in cases of gastralgia, characterized

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by pain in the epigastric region, and a sensation of burning about that part, with paleness of the countenance, anxiety, &c.. codeine has quickly dissipated all the accidents which it is impossible not to refer to the nervous plexus of the great sympathetic. M. Barbier has also seen codeine produce considerable alleviation in cases where the tunics of the stomach were beyond all doubt degenerated. Codeine also produces sleep, when given in sufficient quantity, but this sleep differs from that occasioned by opium; it is never accompanied by a sensation of weight in the head, dizziness, &c. nor does its administration ever give rise to cerebal congestion. M. Barbier has been convinced by the observation of several facts that codeine has no influence over the spinal marrow or its nerves. Many patients affected with the gastralgic pains already alluded to, had also neuralgic pains in the head, loins, thighs, &c.; the uneasine s about the abdomen was quickly relieved by the remedy, but the pains in the limbs, back, &c. remained unchanged. This occurred upon so many occasions as to leave no doubt on the subject. It is necessary to remark; that all the patients on whom the codeine was tried, had previously employed, without any benefit, the liquid laudanum of Sydenham. Codeine does not produce any apparent change in the exercise of the circulation or respiration, nor does it disturb the digestive organs or produce constipation. When applied to the skin, it has not given rise to any remarkable phenomena. In one case, two grains were applied to the surface of a recent blister, but the neuralgic pains for which the blister had been employed, were not in the least alleviated.—*French Gaz.—Ib.*

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29. *Of Iodine in Amenorrhœa.* By A. Trousseau.—Prof. Breda, of Padua, has already in his *Saggio clinico sul Iodio* published several facts tending to establish the happy influence of iodine in amenorrhœa: the results obtained by him have tempted prof. Recamier and myself to experiment the same medicament at the Hotel-Dieu. We administer it in the following manner—fifteen drops of tincture in six ounces of a solution of gum, sweetened and aromatised: one ounce and a-half every six hours: the quantity of tincture is successively increased from fifteen to seventy-five drops. The immediate effects are interesting; and may be observed isolated on several, or reunited on a single patient. Heat in the stomach, soon followed by the beating of the arteries of the head, sus-orbital cephalalgy, tension of the eyes, pains more or less acute, in the arms, the legs, the hypo-gaster: acceleration of the pulse; heat, itching, and sometimes eruptions on the skin; augmentation of the secretions, sweat, and urine. I have never seen the prudent exhibition of the mixture determine nausea vomiting, or diarrhœa; but acute colics, which patients themselves compare to those that precede the catamenia, are frequently observed: this functional disorder subsides or entirely disappears, as soon as the menses begin to flow, the quantity of iodine exhibited remaining the same. When the end aimed at is attained, it is prudent gradually to diminish the dose ere it be completely laid aside. Prof. Breda does not hesitate, in prescribing iodine for fifteen or even thirty successive days, in the treatment of amenorrhœa; but although in the hands of that skilful therapeutist, this method may have proved successful, I prefer limiting myself to the tenth day in order to avoid accidents, which sometimes, though rarely, supervene in the permanent administration of high doses of iodine. Until I find time to publish, on this subject, a more complete treatise, I here give a few observations picked up in my public and private practice.

A young female of twenty-seven was brought to bed of a child which she did not nurse. Her *relevailles* were easy and rapid; but three months passed on and menstruation had disappeared, for the last fortnight the patient was laboring under continued cephalœa, giddiness, pains in the loins: she was admitted into St. Paul's ward. Ten drops of tincture in a potion—the catamenia appeared the following day, and lasted four days; the iodine was administered but once.

For the last several months a young girl of twenty-two, had labored under

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serious hysteric accidents, which at last brought her into my ward, (St. Paul's.) The cramps, the convulsions, the extasies were soon dissipated by cool effusions, (22° th. Reum.) The menstrual flux, as yet regular, had been retarded for a fortnight; it was thought prudent to recall it; successively increasing doses (from five to twenty-five grains per day) of powdered savin were given for a week without producing any result; the tincture was prescribed; fifteen drops the first, twenty-five the second day, at the end of the second day menstruation set in, and lasted its natural period; the iodine was continued for five days.

I might add four other cases in which iodine recalled the menstrual flux, the fifth, the sixth, the seventh day of its administration; I shall confine myself to the following observation reported by Dr. Pigeux.—Mlle———was brought to bed on the 23d of June, 1833. As two months had elapsed and no catamenia had appeared, she bathed her feet every night in a hot and strong solution of potash; in a few days her legs became varicose and her feet tender, but no symptoms of a returning menstrual discharge had appeared. She then took, without advantage, a concentrated decoction of artemisia. By my advice she took, fasting, on the morning, of the 8th of September, twelve drops of tincture in a little sugar and water; on the 9th, twenty, (pains in the loins, general perspiration, giddiness;) on the 10th, thirty-two drops, (gravative pains in the loins, general excitement;) on the 11th fifty drops, (an intense general excitement, the pains in the loins became contusive;) about three in the afternoon the menses began to flow, and all the general symptoms immediately disappeared; they continued to flow abundantly, nor did the exhibition of the iodine determine any perceptible gastric symptom.

But if we have often employed with success the tincture of iodine, in the treatment of amenorrhœa, we have often seen it fail in cases in which the most preconized emmenagogues have proved equally unsuccessful; and consequently we are far from advising it as an infallible remedy; we can only say that we esteem it more trust-worthy than many others. We have prescribed it without success to consumptive patients; we have given it in vain to chlorotic girls; but we must in justice add, that when, in the last cases, we have given to the blood its normal composition, by the exhibition of martial preparations, we have often employed iodine with advantage.

One practical precept I must insist upon; iodine should be administered at the period of the presumed return of the discharge, unless the suppression be but a few days old. And if some lumber or hypogastric pains, some general sensation of plenitude, the greater abundance of a leuchorric discharge, the apparition of an hemorrhoidal flux, or of diarrhœa, do not indicate a general effort of the economy, a previous use of stimulating pediluvies, the application of a leech or two to each thigh, the introduction of an aloetic suppositorium might determine a congestion towards the uterus and form a useful introduction to the administration of iodine. The medicament should be continued eight or ten days, and should it prove unsuccesful, a fortnight's rest should be granted to the patient ere she again be submitted to a similar medication.

Though, in many cases, it be but lost time and trouble to seek the mode of action of the different agents we daily employ, and that it suffices us to know their therapeutic action, it is difficult to refrain from a desire of learning the mechanism by which certain ends are attained. It appears, at first sight, easy to account for the emmenagogue action of iodine: the ingestion of this substance is immediately followed by all the signs of an intense excitation of the circulatory system, and it is easy to conceive that the blood, which flows towards the uterus with the same energy as towards all the other organs, readily follows the *via emunctoria* naturally laid open for it. It would be wrong to conclude that this heroic medicament has an elective affinity for the uterus; this is so far from being the case that we have often seen it determine pulmonary hæmorrhages on tuberculus patients, and epistaxis, when bleeding from the nose was habitual, whilst in the same patients the uterus was uninfluenced. But it must be confessed that this explanation is somewhat deficient; for why

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are not all other stimulants of the circulation emenagogues as well as iodine? and why are many substances in the materia medica, whose properties are sedative, efficacious in the self-same circumstances in which iodine is manifestly useful?—*Monthly Journal of Medico-Chirurgical Knowledge.*

30. *On the habitual use of large doses of Opium.* By Dr. Burdach.—A woman, 38 years old, had two natural and fortunate lyings in; her health was good until the following year when she became again pregnant. At her third delivery, she felt very severe pains in the right foot, for which she sought advice in different quarters without relief. She at last found a physician who administered many doses of opium in powder; her pains were pacified immediately after taking the powders, but soon returned, to disappear as soon as she had recourse to the same remedy, and to re-appear whenever she left it off. At the end of six months, this woman had arrived at the habitual use of half an ounce of pure opium per week: without that she was afflicted with insupportable pains. When Dr. Burdach saw her for the first time, she was dreadfully meagre, she was of an earthy color, cachetic, her eyes dull, the lineaments of her face stupidly immoveable, her intellects very weak, little appetite, stools rare, the skin cold and dry, the pulse slow and feeble.—*Ib.*

31. *Poisoning by the capsules of hyoscyamus niger.* By Dr. Burdach. Two children, five years old, in playing with the capsules of the hyoscyamus niger, eat several. Some hours after, when they returned from the place where they had been playing, it was remarked that they had a general trembling of the limbs, anxiety, agitation, and confusion in their words and motions. Their parents, not knowing what was the cause, began to give them several domestic remedies, and among other things, made them take a large quantity of milk. As the symptoms were not mitigated, they sent for Dr. Burdach, about six or eight hours after the ingestion of the capsules of the hyoscyamus. The little patients spoke, laughed, and sung in a disorderly manner, and recollected nobody. The muscles of the feet and of the face were agitated by convulsive movements, which had an analogy with those of St. Vitus's dance. When attempts were made to repress their movements, they displayed great force for the struggle, and sought, with a kind of rage, to tear, pinch and bite.

Every moment they ground their teeth, and thrust their tongues out of their mouths with convulsion and trembling. Yet the patients took the glass that was presented to them, and drank without much difficulty. Their eyes were brilliant, rolling incessantly, the pupils dilated to such a degree that the circle of the iris nearly confounded itself with that of the cornea; and offered no sensibility to change of light. The pulse was difficult to distinguish, was small and much accelerated. The information furnished by the patients concerning the hyoscyamus, the re-union of the symptoms, and, above all, the extraordinary dilatation of the pupils, left no doubt upon the nature of the poison.

The two indications which presented themselves to Dr. Burdach were, 1st, to expel, by vomiting, the narcotic matter from the stomach and intestines; 2dly, to remove the effects already produced on the organization by the absorption of the poison. He therefore gave every five minutes a table-spoonful of a solution of six grains of tartarised antimony in four ounces of distilled water, until vomiting had ejected portions of the capsules of hyoscyamus; and from time to time he administered spoonfuls of vinegar and strong coffee. After eight vomitings there was a considerable diminution of the symptoms. The next morning they were ordered to drink milk with a mucilaginous ptisan in as large a quantity as possible; and in the evening they were quiet, without delirium, the pupils much less dilated and sensible to light. From this moment the amendment was decisive and progressive; on the following days they continued the use of milk and mucilaginous drinks, and Dr. Burdach was shortly after informed of the complete recovery of his two patients.

[*Hufeland's Jour. June*, 1833.—*Month. Jour. of Medico-Chirurg. Knowl.*

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32. ***On Hepatic Abscess from Dr. Stokes' Lectures on the theory and practice of Medicine.***—But suppose that after all this, after having employed all the resources of the science and art of medicine, your patient becomes gradually weaker, his face pale and expressive of much constitutional suffering, his skin flaccid and bedewed with perspiration, his pulse small, rapid, and compressible; that the hepatic tumor increases in size, and when you throw aside his bed clothes, the whole of the right side appears manifestly enlarged; and, if the bowels are empty, you see the hepatic tumor extending far downwards into the abdomen: in addition to these symptoms, suppose the patient has had shivering fits, not only once but repeatedly; that his perspirations are profuse, and have a sour smell; that his tongue is dry and glazed; that his cheeks are hollow, and sometimes present a circumscribed flush; and that he is low, weak, and restless. Under these circumstances, you may be sure that suppuration is commencing, or has been already established; and the question is,—what are you to do? You must change your hand, you must give up antiphlogistics, you must omit the employment of all measures which have a tendency to reduce strength, you must prescribe a light nutritious diet, and anodynes to relieve irritation. When suppuration is fully established, the next consideration is, in what direction the contents of the abscess may escape; and here I need not remind you that it is much better that the abscess should open externally, through the integuments of the abdomen, or into some cavity having an external communication, rather than into a shut sac, as in the latter case it is almost certain, and often immediate death. At this period of the case it will be proper to support your patient's strength by allowing him wine, increasing the quantity if the hectic symptoms threaten to run him down, and taking care that his diet be nutritious and of easy digestion. You will also take care to relieve the sufferings and irritation attendant on the disease by the judicious employment of opiates.

When after some time the tumor becomes more elevated and distinct, the pain concentrated in one particular part of the liver, and the abscess is evidently pointing towards the surface, the question then is, whether we shall open it and give exit to the matter, and how this may be best accomplished. That the contents of the abscess should be evacuated as speedily as possible, is true, but the consideration is, how far it can be done with safety. Now, I beg your attention to this point, as it has not been sufficiently attended to in works on the practice of medicine. Recollect what the anatomical condition of the parts is under such circumstances, and that in order to get at the matter, you have to pass through a serous cavity. It is obvious that if you make an incision into the tumor through the peritonæum, and if this be in a state of health, and without any adhesions between its layers in the situation of your incision, you run the risk of having the contents of the abscess effused into the peritoneal sac, and you know that this is almost of necessity fatal. The condition then for success is, *the circumstance of adhesion taking place so as to prevent the matter from getting into the peritonæum.*

Well, it seems to be a very simple thing to give exit to the matter of an hepatic abscess which presents a distinct pointing. Persons will say, adhesion has formed long since, the integuments are swollen and painful, the matter has crossed the peritonæum and lies close under the skin. Here, however, is a curious fact; of all the serous membranes in the body the peritonæum is that which is least liable to general or partial adhesions, and it is well known with respect to hepatitis with suppuration, that you may often have abscess so large as to form a distinct tumor on the surface, which shall be fluctuating, discolored, and painful, and with all these conditions, so favorable to the notion of matter being actually under the skin, the patient dies, and on dissection we find not the slightest trace of adhesion. If you plunged a trocar or abscess-lancet into this tumor, what would be the consequence?—death by peritonitis. Dr. Graves and I, in our report of the cases of hepatic abscess which occurred in the Meath Hospital, were the first who drew the attention of the profession to this interesting pathological fact, and subsequently to this, Mr. Annesly,

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who has vast experience in hepatic abscess, stated that in his practice he found that the existence of adhesion between the layers of the peritonæum in the vicinity of the abscess, even after swelling, tenderness, and discoloration of the integuments, is by no means a necessary consequence.

It appears then to be quite certain, that the opening of a hepatic abscess is a matter of considerable nicety, and requiring a great deal of caution. The best mode of proceeding which can be adopted is, in my opinion, that which has been recommended by Dr. Graves, and which is founded on the most accurate pathological views. He makes an incision through the integuments, over the most prominent part of the tumor, and carries it through the cellular substance, fat, and muscular tissue, until the peritonæum is nearly laid bare, and there he stops. The wound is then kept open by plugging it up with lint, and after some time the abscess bursts in this situation with perfect safety to the patient. This operation was performed under his direction, for the first time, in a case of abscess where there was no distinct pointing. It was the first operation of the kind, and every one who witnessed it waited with anxiety for the result. Five or six days passed away without any appearance of matter, but about this period the abscess began to point, shortly afterwards there was a large gush of matter through the wound, and the patient recovered perfectly in three weeks. Since that time the operation has been performed on two patients with success and safety. In the case of one patient it was performed twice at no very considerable interval.

Now, I believe you are all aware, that in cases of deep-seated collections of pus, it is of the greatest importance to remove the obstruction to its exit externally, and that matter will always point towards the place where there is the least resistance. The performance of this operation not only tends to remove the resistance, but also has this advantage, that the existence of irritation in the neighborhood of the abscess, and immediately over the peritonæum, has a strong tendency to produce adhesion at this point, a circumstance which I was able to verify in a fatal case, in which the abscess had pointed, but never burst. In this case we found on dissection six or seven small tumors near the surface of the liver, without any traces of adhesive inflammation in the peritonæum over them, but over the situation of the tumor, in the direction of which the incision had been made, there was a considerable quantity of organised lymph, and the two layers of the peritonæum were closely adherent. That this effusion of lymph had not been accidental, is rendered probable by the rarity of its occurrence, from not being observed in other cases in which an operation had not been performed, and lastly from the success of the operation in those cases in which it had been employed. I would advise you, therefore, in all cases of hepatic abscess showing a tendency to point, but particularly if this pointing be distinctly towards the surface, to make an incision down to the peritonæum, fill up the wound with lint, and you will often succeed in causing the abscess to break externally, and without any danger to your patient.

With respect to the bursting of an hepatic abscess into the cavity of the peritonæum, I have stated to you before, that it is almost necessarily fatal. I say, almost, because I have seen two cases of this termination, of which one recovered completely from the peritonitis, and the other lived eight or nine days after the discharge of matter into the peritonæum, and on dissection it was found that a process of cure had been going on. The first of these cases was that of a young woman who had a vast chronic abscess. An attempt was made to make this open externally, by destroying the soft parts over it with caustic, but this not succeeding, a lancet was introduced through the eschar made by the caustic. The patient was immediately afterwards attacked with severe pain in the abdomen, and distinct symptoms of peritonitis. As she was very weak and emaciated, Dr. Graves, under whose care she was, gave her opium in full and repeated doses, allowed her the free use of wine and porter; no blood was drawn, no depleting measures of any kind used, but every thing done to support strength and relieve irritation. Under these circumstances

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(wonderful to relate,) she recovered from the peritonitis. She afterwards sunk from the abscess, and on dissection we found that the peritoneal cavity was obliterated, just as the serous investment of the testicle has its opposed surfaces glued together after an operation for the radical cure of hydrocele. In the other case, the patient lived eight or nine days after the occurrence of symptoms of peritoneal inflammation. On dissection we found a large quantity of transparent lymph effused on the surface of the peritonæum, in the substance of which several large blood-vessels had been developed.

The principles of treatment in a case of this dreadful accident is to support strength and remove irritation, laying aside all antiphlogistics. I am sure that, under such circumstances, the ordinary modes of treating peritonitis are inapplicable and useless. As I shall return to this subject when I come to speak of peritonitis, I shall merely state, that the treatment of such a case as this is to be conducted upon the same principles as peritonitis, produced by rupture of the intestine, or a perforating ulcer.

[*London Medical and Surgical Journal, April*, 1833.

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33. *Advantageous effects of Compression in a case of Abdominal Meteorism.* M. Gaussail reports the case of a man, aged 68, who was attacked with abdominal symptoms of a painful and troublesome character, after an evening repast on French beans. Various remedies were used without affording relief. On the 7th day the abdomen was enormously tympanitic; respiration short and laborious; almost constant eructations. Drinks were vomited immediately after being swallowed; semi-liquid and fetid substances were also vomited, at long intervals at first, which subsequently became shorter. Vomiting took place without any effort, and by a sort of regurgitation. No alvine evacuations; pulse depressed; skin dry; countenance profoundly altered.

There remained the alternative of puncturing the intestines. Particular circumstances prevented the use this means. It then occurred to M. Gaussail to employ compression. Linen cloths folded and doubled several times were applied on the most prominent part of the abdomen, and retained by a large bandage passed round the body and tightened with some force. This pressure was at first very painful. The patient begged to be relieved from the bandage. Symptoms threatening syncope supervened; but in a few minutes the patient became tranquil, and in two hours he was in a more favorable state. Gas escaped in great quantity from the mouth. The bandage was tightened again, and more frequent and larger emissions of gas proceeded from the mouth and anus. In the evening the bandage was found relaxed; the abdomen had completely sunk, and the skin was wrinkled with many little furrows. The gas was seldom reproduced; the pulse rose; the suffering and anxiety painted on the countenance disappeared, leaving an expression of happiness and contentment. The application of the bandage was continued three days, convalescence progressed and purgative pills were given for several days. Diet more and more substantial was gradually allowed. The cure was completed on the 22d day from the commencement of the attack.—*Jour. Univ. et heb. de Med. &c. f. 18, No. 163, p. 201.* J. F.

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34. *Mineral Magnetism in Neuralgia.*—Dr. Bermond, struck with the success obtained by Dr. Kelly of London from the application of the *Magnet* in cases of neuralgia, employed the same means in the following instances:

1. A lady, affected with dental pains, and having a large molar tooth in a carious state, was completely and suddenly relieved of the pains, by six frictions made in the direction of the dental nerve with a magnet, in which the forces of tension and electro-motivity—a necessary condition, were well developed.

2. Another lady was subject to a sub-orbital neuralgia which various active remedies failed to assuage. Several applications along the course of the sub-orbital nerves with the *north pole* of a magnet removed the pains. Frictions

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made afterwards with the *south pole* caused the pains to return. They were again dissipated and cured by applying the *north pole.*

3. The same effects were obtained in the case of a young man, affected with sciatic neuralgia.—*Revue Medicale, Oct.* 1833. J. F.

35. *Strychnine in Paralysis of the Face.*—M. Lanelongue reports a case of paralysis of the left side of the face, which he ascribes to a rheumatic inflammation of a part of the *portia dura.* This paralysis, treated at first by leeching and vesicatories, yielded to the internal and *endermic* administration of strychnine in doses of the eighth of a grain a day, in each way. The author alludes to the success met with in the Hôtel Dieu, by M. Bally from the same mode of treatment. The editors of the *Revue Medicale* suggest the importance of remembering, that *time* alone frequently cures this variety of paralysis in some subjects. They state there is now a patient, in the hospital Saint-Louis, who has experienced no benefit from the treatment extolled by M. Lanelongue.* *Revue Medicale, Oct.* 1833. J. F.

36. *Remarks on Beriberi.* By P. W. Wright, Esq.—The few treatises on this disease mention it as being chiefly confined to the Malabar coast and the Island of Ceylon. In this part of the Malabar coast, I have had ample opportunities of observing it during a residence of upwards of two years. Beriberi is, for the most part, a primary complaint, attributable to some peculiarity in climate and locality, and does not seem to be brought on by other diseases, whether acute or chronic. It makes its advances in an insidious manner, without any primary marked train of symptoms, the habit requiring to be assimilated by a certain residence within the sphere of action of the general and exciting cause. So that before the visible invasion of the disease, there appears to be a precursory stage, in which the indisposition is comparatively slight. The periods of infancy and boyhood are exempt; and females are seldom attacked.

I have observed the disease under several forms; but these, I conceive, may be referred to three general heads.

The *first* of these I shall call the severe or inflammatory, in which it is generally a first attack, the patient robust, and dropsical symptoms present, resembling what pathologists call acute or arterial.

The *second* is the asthenic, when the patient may have been worn out by some previous disease, or had a relapse of this,—not an uncommon circumstance, as one attack predisposes to another, and when the dropsical symptoms resemble those observable after protracted fevers, or other debilitating causes.

The *third* is what I shall call the local, from the disease appearing to be confined to the lower extremities, there being œdema and paralysis only of those parts, and no constitutional irritation.

The above, however, occasionally vary, according to the constitution of the patient, and the necessary hurtful circumstances; for there are instances where the patient has been admitted with local symptoms, and suddenly been seized with general acute anasarca.

To be more minute. In the first mentioned form, the patient on admission complains of having been for a short time previous incapable of exerting himself from a partial loss of the use of the lower extremities. This rapidly increases, till he finds that there is inability to walk, accompanied with œdema of the extremities, which soon becomes general. The skin is hot and dry, urine scanty and high colored, bowels costive, and stomach irritable, rapid and full, pulsations at the large arteries, variable at the extremities, accompanied generally with dyspnœa, and symptoms of effusion in the chest; whilst at other times there is headache, restlessness, delirium with a slow and full

* There is a paper on the employment of strychnine in the treatment of paralysis, by E. Geddings, M.D. in the American Journal of Medical Sciences, vol. vii. 334. J. F.

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pulse, indicating serous effusion, and pressure upon the brain. Here the progress of the disease is rapid, and active measures are required to check it. In the second mentioned form or asthenic, abdominal dropsy is most prevalent, accompanied with symptoms of general relaxation, small and quick pulse, constipated bowels, scanty urine, loss of appetite, general œdema, much pitting on pressure, and paralysis of the extremities, as in the former instance. In the third mentioned and most subordinate form the patient complains of numbness of the lower extremities, rigidity with a sense of weight and partial loss of their use; there is œdema only of those parts with slight pitting on pressure; there is no unnatural heat of skin; the pulse is seldom above the natural standard; the urine is scanty; and the appetite unimpaired.

Mr. Hamilton observed the disease under two forms, one in which the symptoms were at first mild and increased in severity, and the other, in which they were at first urgent, increased rapidly, and generally proved fatal.

In Dr. Johnson's valuable work on tropical diseases, the several treatises on beriberi also mention the numbness, paralysis, and œdema of the extremities as being the leading symptoms, being followed by dyspnœa, oppression at the *præcordia*, and the patient being finally carried off with fever and delirium.

The etiology of beriberi is but little known, and it would, I think, be difficult to defend an opinion as to the primary cause of that morbid train of associations which create it,—whether it may be attributed to marsh miasma, peculiar alterations in climate and temperature, or some noxious quality in the water of the district when the disease is endemic. It, however, appears to be most prevalent towards the end of the rainy season, when the night temperature is many degrees lower than that of the day. From the month of April to August last, the weather was permanently hot, and the admissions few. From August to December, there were heavy falls of rain, with occasional sultry days, when the alternations of temperature were greater, the exhalations more concentrated, and the admissions of beriberi more frequent.

This district is plentifully supplied with tanks and other reservoirs of water for irrigation. The principal produce is consequently wet grain. Towards the sea there are several salt marshes, with considerable tracts of cotton ground, which being porous is very absorbent. Generally speaking, indeed, the soil of the country immediately around is of great depth and very absorbent, so that the greater part of the periodical rains is retained, there being no large rivers to carry them off. It may be here also worthy of remark, that the most of the patients on their admission to hospital, when questioned as to their idea of the origin of this disease, invariably state that something noxious in the water they drink is the cause of all their sufferings. There are no fresh springs in the neighborhood; and the water used for culinary purposes is generally taken from wells which, when frequently drawn, ought to be pure. Having filtered through a limestone soil, the principal solid ingredients in the water of several of the wells in this cantonment, are the sulphate and carbonate of lime, but in too small a proportion to be noxious. This disease is also equally prevalent in all the villages in the vicinity, in some of which the water used for culinary purposes is taken from tanks, some of which are brackish, full of weeds and animalcules; whilst others, the soil immediately around being composed of a red ferruginous substance, contain a reddish colored water, with a slight astringent taste, and which is more free from any noxious animal or vegetable substance.

The Hindoo practitioners ascribe this disease to some morbific substance, with which the water and air become impregnated at certain seasons. The remedies used by them are stimulants and carminatives, such as ginger, cloves, nutmegs, and other spices, made into a paste, Treeak Farook, warm applications locally, and burying the lower extremities in hot sand.

It seems a disputed point whether this disease is originally nervous and dependent upon some primary affection of the *encephalon* and *medulla*, or whether it proceeds from an original dropsical diathesis, dependent upon some disorder

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of the sanguiferous system. The latter I think the most probable, since the symptoms of diminished nervous energy are only secondary, and occasioned by engorgement of the venous vessels of the brain and *medulla*, and also by the pressure of serous blood secreted from their membranes; and because, as in most dropsical complaints, the serous part of the blood appears to be lodged in the cavities and cellular substance, whilst the veins are loaded with crassamentum. This is more applicable to that severe form of the disease attended with *dyspnœa* or *phrenitis;* whilst in the milder and more local form, the serous effusion and engorgement would seem to be confined to the lower part of the spinal marrow, causing paralysis only of the lower extremities, as it has been stated that paralysis of the lower extremities may be unconnected with diseased brain.* Moreover, the paralysis that is dependent upon disease of the brain or *medulla* is known to be rarely capable of cure; † whilst that which accompaniest his disease yields generally to de-obstruents and remedies which have power over dropsical complaints.

Morbid Appearances.—Dissections of this disease show that the patient is at times killed by suffocation from the increased pressure of accumulated fluid in the lungs, and at others by apoplexy, by the pressure of dark venous blood on the brain, accompanied generally with serous effusion. In most instances the venous system of the brain was found engorged without extravasation. There was serous effusion between the *dura* and *pia mater,* and at the basis of the brain. The same appearances were observable in the spinal canal, its vessels being engorged, with effusion from its membranes. There was anasarcous effusion throughout the body; and there was generally effusion in the cellular substance of the lungs. In one instance, where the patient had suffered much from dyspnœa, a considerable quantity of water was found in the cavities of the chest. There were also traces of inflammation in the lungs and *pleuræ*. Their vessels were turgid with dark colored blood, and the heart appeared flaccid and enlarged. In another instance, where the patient had suffered from *ascites*, there was general effusion in the cellular membrane; a large quantity of fluid was observable in the cavities of the abdomen, without any traces of inflammation of the viscera; there was also effusion in the brain and medulla without engorgement. in the milder and more local form I am unacquainted with the morbid appearances, but imagine that the serous effusion and engorgement are confined to the lower part of the spinal marrow.

Diagnosis.—The most uniform symptom of this disease is the characteristic paralytic affection of the lower extremities accompanying all forms, and described by the patient as if the legs were insufficient to bear the weight of the body, the rapidity with which the œdema becomes general in the severe forms, and the dark ropy condition of the blood when taken from the patient, resembling in some degree the appearance of the blood taken from a patient affected with cholera. The other symptoms are common to this, as well as to other dropsical diseases, such as partial suppression of urine, diminished secretion from the surface, and the symptoms peculiar to dropsical affections of the abdomen, chest, or *encephalon*, which ever may be the part more particularly affected.

The prognosis is generally unfavorable. The disease approaching insidiously appears to rivet itself in the constitution; its removal will consequently be more difficult, relapses more frequent, and convalescence lingering. Much depends, however, upon the habits of the patient and the length of time the constitution has been affected. The symptoms which denote danger are general œdema, much anxiety, and palpitation of the heart; the respiration becoming more affected as the fatal termination approaches, being labored and quick, and interrupted, with sighs and groans, the pulse becoming weak and irregular at the extremities, with palpitations at the heart. The head being affected

* See Thomas' Practice of Physic, p. 357.

† See Gregory's Practice of Physic, p. 355.

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with coma and delirium are very unfavorable. With respect to the natural functions, much nausea, obstinate costiveness, dry and black tongue, are symptoms of danger; and in those instances where there has been a relapse with ascites, danger is indicated by the various symptoms denoting great debility of these functions. In some instances the disease is complicated with remittent fever. The prognosis is favorable when the œdema has come on gradually, and is confined to the lower extremities, when the skin is moist and moderately warm, when the patient enjoys sleep, and the vital functions are unaffected.

Treatment.—Regarding the treatment of beriberi, several of the writers on the subject consider it a disease of debility, and recommend stimulants, de-obstruents and antimonials; whilst others, allowing it to be an inflammatory complaint, recommend blood-letting and evacuants. Both methods, I conceive are applicable, being varied according to the peculiar form of the disease. The latter, however, I think to be the most correct view of the disease, considering it to be one of the tribe of idiopathic dropsies, which, according to Drs. Parry, Blackall and other late writers, are caused originally by increased momentum and disorder of the sanguiferous system, having a general alliance with inflammation, whatever appearance they may afterwards present. In this instance, particularly, I consider the disease as originating in a state of plethora, with obstructed circulation, and infer that the exhibition of stimulants gives only temporary relief, the morbid secretions being only oppressed while their cause is unremoved; whilst the use of blood-letting and evacuants is superseded generally by symptoms of increased energy of the nervous and arterial systems,—consequences which would not probably have taken place if the preceding debility was real. I have often observed, that though the pulse at the wrist was weak and irregular, whilst there were pulsations in the large arteries, bleeding increased the pulsation in the small arteries, and rendered it more uniform generally. This treatment is peculiarly applicable to those cases where there is much difficulty of breathing and delirium, the patient robust, and when the œdematous swellings do not pit much on pressure, where there is rapid and full pulsation of the large arteries, and where the urine shows the existence of albumen. Here the rapidity of the progress of the disease calls for some decided measure; and whether the head or the chest may be the part most particularly affected, as other means are of secondary influence, bleeding is the palladium of the patient's safety, and is generally followed by a diminution of the severity of the leading symptoms. The breathing becomes less oppressed and laborious, the œdema and numbness gradually disappear, the headache, restlessness and delirium are diminished in violence.

Calomel and squill given twice or thrice daily, in doses of eight or ten grains of the former to two or three of the latter, are useful as de-obstruents, in promoting the absorption of the fluid deposited in the cellular texture or membranes; and, should the mouth be affected, the danger of a fatal termination is diminished. Should there be irritability of stomach; the effervescing draught with doses of laudanum and camphor mixture, are useful in this, as well as in giving temporary relief when the dyspnœa is violent. Saline drinks are useful in promoting perspiration. The extremities should also be rubbed with stimulating liniments, and rolled in flannel bandages.

In those instances where the patient has long suffered from this disease, accompanied with abdominal dropsy, where he may have been worn out by any previous disease, or had relapses of this, the strength must be supported by cordials, wine, bark, and nourishing diet. The abdomen and extremities should be rubbed with warm flannel and stimulating liniments. Calomel and squill given, as before mentioned, are useful; and, should the mouth be affected previous to the removal of the dropsical symptoms, doses of equal quantities of the tincture of squill and digitalis, from ten to fifteen drops of each twice or thrice daily, may be given. Should the disease be complicated with periodical fever which it occasionally is, quinine should be given during the apyrexia.

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In the third mentioned form, or that in which the numbness and œdema appear confined to the lower extremities, treeak farook is very useful, given in the form of a pill composed of equal parts of treeak farook, cloves and rhubarb powder three times daily. It does not appear to be an active medicine, and would have little power in the severe forms of this disease. It is not accompanied by any violent purging, increase of pulse or determination to the surface; but after it has been used for from one to two weeks, it is generally attended with the removal of the œdema and numbness or paralysis, should it be present. It is also useful in the other forms of the disease when the patient is convalescent, and paralysis and œdema have not entirely disappeared.

I have not been able to ascertain the ingredients of this medicine. It is, I believe, made in some province bordering on Arabia; but the papers which surround the leaden case, in which it is contained, throw no light on the subject. I believe it was first recommended by Dr. Herklotts of this establishment as a remedy in beriberi. In several instances in which it has failed, nux-vomica has been successful, commencing with doses of two grains daily, and increasing gradually. Local abstractions of blood from the spine are also useful, and a blister applied over the loins has given relief in many obstinate cases.—*Edinburgh Medical and Surgical Journal, April*, 1834.

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37. *Effects of the white oxide of antimony in the pneumonia of children.*—The beneficial effects of antimonial preparations, on certain forms of inflammation, and the high doses to which the administration of this remedy has been carried by the Italian and French physicians of the present day, are well known. The subject has been still further investigated very lately at the *Hotel Dieu* by Messrs. Trousseau and Bonnet, and several cases have been treated at the *Enfans Malades* by Messrs. Guersent and Baudelocque, which satisfactorily prove the therapeutic effects of antimony on parenchymatous inflammation of the lungs in the young subject. We shall take this opportunity of referring briefly to the observations of M. Trousseau, and shall then notice a few of the most remarkable cases just alluded to.

The experiments of M. Trousseau, were conducted under the eye of M. Recamier at the *Hotel Dieu*, for the space of eighteen months. The effects of antimonial preparations on the economy are various; but it is our intention to consider merely their antiphlogistic properties, which, according to M. Trousseau, are more powerful than those of any other substance in the materia medica. Antimony was administered, chiefly in the form of tartar emetic, to individuals affected with a great variety of non-febrile diseases, as chronic rheumatism, sciatica, chronic catarrh, &c., and produced important modifications in the state of the circulation, respiration, and urinary secretion.

1st. The *circulation* is calmed in an extraordinary manner under the influence of antimony; the pulse becomes more feeble and slow. M. Trousseau has seen the pulse brought down in three days, from seventy-two to forty-four, at which latter rate it continued to beat for a considerable time. However, the diminution seldom exceeds one-fourth or one-fifth, while the strength of the pulse is lowered in a very remarkable degree.

2nd. The *respiration* is affected soon after the influence of the remedy is felt in the circulation; in some cases the retardation is very great, the rate of respiration falling from twenty-four or twenty in the minute to six; but although the patient breathes in this extremely slow manner, he suffers no difficulty or embarrassment in his respiration.

3rd. On the *secretion of urine.* When antimony does not determine vomiting or purging, it constantly augments the secretion of urine. The fact is indisputable, although it has not been noticed by any of the authors who have lately written upon the action and effect of antimonial preparations. We here see some analogy between the effects of antimony and other remedies which exercise a sedative influence on the circulation, as digitalis, squills, vegetable acids, &c.; both these, at the same time that they lower the pulse, stimulate the kidneys also, and increase the secretion of urine. It has been generally consi-

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dered, that the local irritating action of antimonials is in direct proportion to their solubility, and this, in fact, is true; but the experiments made at the Hotel Dieu demonstrate this curious and inexplicable fact, that pure antimony, in its metallic state, acts almost as energetically as tartar emetic.

Fifty-eight patients, affected with acute pneumonia, were treated by M. Trousseau, with antimony alone, no other remedy or therapeutic agent being employed. Of these, two cases terminated fatally; one that of an old woman, who came into the hospital on the eleventh day of the disease; the other was the case of a man who was treated before the fifth. Tartar emetic, metallic antimony, the protoxide, deutoxide, tritoxide of antimony, antimoniate of potass, and Kermes mineral, were administered to these patients. The general effects of the remedy were invariably the same, but the local effects frequently differed according to the form in which the antimony was administered. One of the earliest effects of the remedy is seen in the altered state of the *expectoration*. Of the fifty-six patients who were cured, the peculiar expectoration of pneumonia had disappeared in fifty-four, within forty-eight hours after the administration of the antimony; the rusty-colored bloody expectoration soon assumed a yellow tinge, and in three days was converted into that of acute catarrh. In one-fourth of the cases treated at the Hotel Dieu, the expectoration peculiar to pneumonia was removed within twenty-four hours. The diminution of the pulse in *strength* and *frequency* was a constant phenomenon, and took place very rapidly, arriving at its maximum about the fifth day of treatment. Of the fifty-six patients above mentioned, the febrile heat persisted beyond forty-six hours in five only, and of these, three were relieved from this symptom on the fifth day, and the two others on the sixth. The persistence of febrile heat and frequency of the pulse took place only in those cases where the pneumonia had passed into its third stage, and suppuration had constantly existed. The diminution of the number of respirations in a minute was equally constant, but was not on all occasions proportionate to the retardation of the pulse.

We have (says our reporter), had occasion to verify this remark of M. Trousseau, at the Hôpital des Enfans, where we have seen the relation between the respiration and pulse in cases of pneumonia excessively various, and apparently governed by the state of the lung itself. As to the local effects, tartar emetic generally produces vomiting and purging when it is first administered; metallic antimony has also the same effect in a few cases, while the insoluble preparations seems to have no effect whatever on the stomach or bowels. It is necessary to remark, that bleeding was never employed as an auxiliary, and those cases were most speedily cured, where the fever was most violent, the pulse full and intermitting, the skin excessively warm, &c. in short, where the symptoms indicated a very high degree of inflammatory action. M. Trousseau, indeed, is of opinion, that bleeding from the arm rather diminishes the good effect of antimonials, for he has remarked, that it is much more difficult to bring down the pulse and fever, and to lower the respiration, after the patient has lost one or two pints of blood.

One of the most remarkable circumstances attending the treatment of pneumonia by antimony, is the rapid manner in which the patient recovers after the inflammation has been once subdued by the remedy; the period of convalescence is always short, and a relapse hardly ever occurs, unless the patient is guilty of some great imprudence, or the administration of the antimony has been suspended too suddenly. For females, and young subjects, we may commence by giving twenty grains of the white oxide; if for adults, or old people, thirty grains; the dose may be increased by one half on the next day, and this should be continued until the febrile symptoms are entirely removed, or even rather a few days longer; the dose should now be diminished gradually, in proportion as the patient partakes of more aliment. It is worthy of remark, that the effects of antimony were considerably modified by the peculiar state of the atmosphere during the prevalence of cholera in Paris, and that a very small dose often produced at that time gastric disorders of an unpleasant nature.

The efficacy of antimonial preparations, in cases of pneumonia has been

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equally established at the Hôpital des Enfans Malades, where M. Baudelocque has been in the habit of employing them for a long time. There is perhaps no other affection to which young children are so exposed during the course of eruptive diseases as pneumonia, and the period at which the inflammation is developed, the insidious manner in which it comes on, and the already reduced state of the little patient, render it a very dangerous and fatal complication. Thus a child is attacked during the suppurating or scabbing stage of small-pox; he has been reduced to an excessive state of debility, by a disease which has continued with severity for twelve, or even twenty days; the patient is perhaps affected with diarrhœa, and the irritable condition of the gastro-intestinal symptom will not permit us to act upon the bowels; here the administration of purgatives, or the employment of general bleeding, is totally inadmissible, and we have no hesitation in affirming that the prompt administration of antimony is absolutely necessary, to afford the patient any chance of recovery. The greatest care and attention are required on the part of the physician to detect the existence of pneumonia in many of these cases, especially when the child is very young; when the inflammation is confined to a limited portion of the parenchymatous tissue, and when both lungs are affected at the same time.

The presence of pneumonia in the infant is seldom declared by any remarkable degree of febrile heat; there is no expectoration, little or no cough, and without the assistance of auscultation we would be perfectly ignorant of the existence of the disease; but when the inflammation is lobulated, and attacks corresponding parts of both lungs, the diagnosis, even with the assistance of the stethoscope, is extremely difficult. We can appreciate no difference of sound between the two sides of the chest, which are equally dull to percussion; and when the portion of lung affected is deep-seated, the respiratory murmur often masks any rale which the stethoscope would easily detect under other circumstances.

The following cases are examples of pneumonia supervening during the course of small-pox:—In the first, (that of Lefort), the pulmonary inflammation came on at the late period of the disease in a very insidious form, and when the patient was much reduced; it was not recognised by the physician, and proved quickly fatal. In the case of Bernard, the beneficial effects of the white oxide were quickly produced; the eruption, which was suspended in its progress during the development of the inflammation, afterwards resumed its ordinary march, and the patient's health was rapidly re-established under the influence of the antimony.—*London Lancet, April,* 1834.

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38. *On the use of sub-nitrate of bismuth in the treatment of diseases of the stomach.*—By A. Trousseau.—In simple acute gastritis, the sub-nitrate of bismuth appeared to him in one instance alone to produce some relief; in all the other cases it was neither useful or hurtful. Thus Dr. Trousseau has given up making use of it in this kind of affection of the stomach. The sub-nitrate, given at the dose of one or two scruples a day, frequently calmed those spasmodic vomitings, purely nervous, that are brought on by vivid emotion, or when in pregnancy. In well characterized chronic gastritis, the same doses taken at meals and associated to the use of the Vichi waters, or to the solution of bicarbonate of soda (a drachm and a half to a bottle of water) dissipated symptoms which had existed a long time. When diarrhœa coincided with chronic gastritis, the same good effects were observed: it was not so if constipation existed; in this case Dr. Trousseau gave calcined magnesia, every second or third day, fasting, at the dose of half a drachm or two scruples. Simple gastralgia, that is to say that which did not appear to be connected with any functional lesion of the genital organs, was cured with facility by the long-continued use of nitrate of bismuth. The other form of gastralgia, attended with nervous symptoms, such as continual muscular twitchings, the exaltation of the sensibility, and the most capricious moral state, appeared to Dr. Trousseau the most difficult to cure. The sub-nitrate of bismuth has been hitherto the medicament from which he has obtained the most advantage in those cases: he gives it, from the first day, at the dose of 24 grains, and

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quickly carries it to 48. He orders, at the same time, tepid enemata of linseed mucilage, and *warm* injections to be made into the vagina; for cold, by the immediate re-action it provokes, increases considerably the heat that women, afflicted with this nervous affection, generally feel in the genital organs. Dr. Trousseau strongly recommends, for the treatment of gastralgia in general, an undebilitating diet; he wishes a stimulating nourishment, and insists only on the necessity of graduating and moderating the stimulation.—*Bul. Ther. July. Month. Jour. of Med. Chir. Knowledge.*

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39. *Sulphurous baths in Chorea*, by M. Baudelocque, of the Hôpital des Enfans.—Sulphurous baths had never been employed in chorea, says M. B. when in the month of November last, I was led to use them. Wishing to determine the value of the principal remedies extolled for the treatment of chorea, I had employed blood-letting, purgatives, the sub-carbonate of iron and the pills of Meglin. Obtaining no sort of amelioration of the condition of five young girls submitted to these modes of treatment, I added to them, without better success, the use of the warm bath every morning. I then thought of the cold bath; but I considered it cruel and dangerous in that season of the year to try such a treatment on children. Before resorting to it, it occurred to me that sulphurous baths might be advantageously substituted.

I saw my five patients cured with remarkable rapidity. Their beds were soon occupied by other patients, and the exclusive employment of the sulphurous baths procured results equally satisfactory. In five months, *twenty-seven* were subjected to this treatment, and twenty-five were cured. I have seen these baths fail in only one patient, whose chorea remains in the same degree, although it has been treated by all the known remedies. The sulphurous baths have been ordered every day except Sunday—their duration being about an hour. I allowed nourishment to the patients according to their appetite. Those who could not masticate, and the number was considerable, were nourished with soups and potage; as their condition improved, bread was added, also meat and pure wine. When the appetite diminished, the cure did not progress. I have several times seen chorea remain stationary after a remarkable improvement. This has happened chiefly with children, who, before their admission into the hospital, had been enfeebled, either by diet or blood letting. The sub-carbonate of iron then wonderfully assists the sulphurous baths. I have prescribed it in doses of twelve grains, morning and evening, and it almost immediately puts the patient in the way of being cured.—*Archives Générales, &c. Nov.* 1833.—*Gen. de Therap. t. s.* 7 *me. liv. p.* 204. J. F.

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40. *Liquid ammonia in amenorrhœa.* By J. Lebaudy.—We have already indicated, says the *Observatore medico*, the happy results obtained by professor Lavagna, from the injection of ammonia in the vagina, in cases of amenorrhœa; we now submit to our readers the observations published by Dr. Fenoglio in the *Repertorio medico-chirurgico del Piemonte*, (July, 1832.)

1. The first case is that of a lady, cachetic, depressed in spirits, and subject for the last seven months to an abundant mucoso-puriform discharge, which had entirely superseded the catamenial flux. All the means generally made use of had been had recourse to, and all in vain. Injections of five drops of liquid ammonia, diluted in three ounces of distilled water, were made for several days, and several times a day. The puriform discharge was immediately moderated; pains in the loins, and other foreboding symptoms of menstruation, became manifest, and the catamenia re-appeared fourteen days after the first administration of the ammoniacal injection. Health completely restored.

2. In the second observation, the patient, after the first injection of the solution, felt acute pains in the loins, and was seized with a violent fever which yielded to an application of leeches, and which was followed by the re-apparition of the menses, and of restored health.

3. In the third, the extreme sensibility of the uterus prevented it from tolerating the injections; this sensibility was modified by the internal exhibition of a few pills of hyoscyamus and hemlock, and the injections were resumed. The

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violent lumbar pains which followed necessitated the application of leeches, and the menses, which for seven months had entirely ceased to flow, re-appeared, and with them health.

Dr. Fenoglio remarks, that if the uterus was the seat of some organic lesion, of scirrhus, etc., the ammoniacal injection would hardly fail to have a pernicious influence; he in consequence recommends a previous exploration of the genital organs.

4. Case of a lady in whom a periodical hæmoptysis had superseded the catamenia.—Death.

5, 6. Doubtful cases as to their issue.

7. In this case the ammoniacal injections, repeated for twelve days, completely re-established the functions of the uterus, though the pains in the loins still persisted.

All the other women who underwent this treatment were compelled to suspend it, on account of the intolerable pains it occasioned.

From these facts, the author concludes that ammonia, thus administered, possesses an action stimulating, diffusible, energetic; capable of recalling the uterus to its normal functions, but capable likewise of provoking metritis.

[*Monthly Journal of Medico-Chirurgical Knowledge.*

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41. *Speedy cure of Condylomata, by the Thuya of the west.*—The discovery of the therapeutic properties of the western thuya is due to Hahnemann, who administered it internally according to the homœophatic method. Dr. Leo, of Warsaw, employed *the essence of the thuya occidentalis only externally,* and has obtained wonderful effects from it. He applied upon the parts that he wished to heal, several times a day, lint soaked in this liquor; in three cases where the condylomata had repululated in spite of the employment of all external remedies, even of incision and actual cauterisation, he performed, by this means, the most rapid and perfect cure. The condylomata withered and fell off entirely in three days. In two of these patients mercurials had been administered without avail.—*Month. Journal of Medico-Chirurgical Knowledge, December,* 1833.

SURGERY.

42. *Case of Hypospadia; with Remarks illustrative of the Treatment of that species of Malformation.* By M. Dupuytren. A child laboring under a malformation of the urethra, was brought to the Hôtel Dieu in September last. The orifice of the urethra was placed about an inch and a half below the extremity of the glans: the latter was imperforate. When the urine flowed, it issued perpendicularly from the penis. The jet was small and the evacuation incomplete and requiring an effort. The bladder was never perfectly empty, and the little patient could make water whenever he was desired. Such a position of the orifice of the urethra must render the individual unprolific: the semen could not be ejected towards the neck of the uterus; and for this reason, together with a desire to remove, if possible, the awkward condition of the parts, M. Dupuytren proposed to form an artificial prolongation of the urinary passage, so that it might terminate in its natural situation. His purpose was to effect this by the white-heat cautery *en roseau,* to be applied along the track of the urethra, from its extremity to its accidental opening. But the parents refused to permit the operation.

Hypospadia has been noticed by many of the more ancient surgeons, and various methods have been recommended by way of remedy. The treatment must evidently be very difficult, if not impossible, when the opening in the passage is far below the glans; and it has sometimes been so low as to raise doubts as to the sex of the party—when, for example, the urethra opens in front of the scrotum, or in the perineum. Paulus Ægineta recommended that the end of the penis, beyond the orifice, should be amputated. Galen, Albucasis, Fabricius ab Aquapendente, and Dionis advised that an artificial passage should be made

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through the glans, and a leaden bougie introduced and left there for some time. By means of small clean incisions, and bringing the lips together, cicatrization of the opening was effected, and a canula remained in the passage till the cure was complete. But modern surgeons have been pretty generally opposed to any operation of the kind. Sabatier speaks positively against it; and Richerand agrees with him in thinking that any canal so formed must necessarily become obliterated. M. Dupuytren, however, who is of opinion that individuals affected with hypospadia are for the most part barren, has ventured to depart from the precept and practice of eminent authorities, and, in one instance at least, has had reason to be satisfied with his determination.

Twelve or fifteen years ago, a child, the heir of a rich family (much interested, of course, in his preservation,) was brought to M. Dupuytren. Hypospadia was the complaint sought to be remedied. There was, at the root of the penis, a very small opening, by which all the urine passed slowly and with difficulty. From this point to the extremity of the glans there was no trace of an urethra. At the request of the parents, M. Dupuytren undertook a mode of treatment. He introduced a delicate trochar, from the anterior inferior part of the glans, along the track which a natural passage would follow, and pushed the instrument until it reached the accidental opening. He then cauterized the passage with the white-heat cautery *en roseau*. Very violent inflammation ensued, almost threatening gangrene; but by the proper use of antiphlogistics, this was subdued. An abundant suppuration followed. A gum-elastic catheter was introduced along the artificial passage, and continued into the bladder: it was kept there for three months. The accidental opening was several times touched with nitrate of silver, and was ultimately closed. The urine, at the end of this time, flowed freely by the new passage. But M. Dupuytren recommended that the catheter should still be employed, till the cure was complete and satisfactory. The child was then removed from Paris, and M. Dupuytren has reason to believe that every thing turned out successfully in the cure.

When hypospadia is carried to an extreme degree, it sometimes leads to strange mistakes, touching the sex of the individual. It constitutes a sort of supposed hermaphrodism, when its seat is in the perineum; the scrotum is then divided into separate folds, which resemble the labia, each of the folds containing a testicle; the penis, if not well developed, simulates the clitoris; and the opening of the urethra is taken for the orifice of the vagina.

M. Dupuytren knew a most curious case of this kind. A person affected with hypospadia was married for fifteen or twenty years, and during that period was treated as a female. Sexual intercourse was regularly effected by the canal of the urethra; nor was it till that length of time had elapsed that it was discovered the individual was a man.—*Journal Hebdomadaire.—London Medical Gazette, April*, 1834.

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43. *Case of Epispadia.* By Dr. Cramer. In the autumn of 1828, during the levy of troops in Wesensee, I had an opportunity of examining a young man of 21, who had a remarkable malformation of the urinary organs. The urethra did not lie in its usual place beneath, but above, the corpus spongiosum, and was divided in its whole length from the arch of the pubes to its extremity: the penis was of the natural length. The mons veneris was wanting, but in its stead there was a reddish skin, covered with a scaly cuticle, and destitute of hair. Beneath the pubal arch there was an opening, into which a finger might be readily introduced, so as to reach the isthmus. The glans were also divided, and the rudiments of a prepuce were observable about its root. When the margins of the fissure were brought together by pressing them on both sides, they were found to coincide pretty exactly. There was nothing apparently amiss with scrotum and testes: and the animal passions were energetic, though the young man denied that he had ever had any sexual intercourse. His parents were healthy people, and none of his brothers or sisters ever had any deformity that he was aware of. It should be added, that this person labored under incontinence of urine; and for the greater convenience of emptying the bladder, was in the habit of generally wearing a petticoat instead of breeches. Does not mal-

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formation of this kind belong to the hare-lip and cloven-palate species: and might it not be cured by similar means?—*Medicinische Zeitung; edited by Dr. Hecker, of Berlin.—London Medical Gazette, April*, 1824.

44. *Incision of the Urethra for Fistulæ.*—By M. Viguerie.—A patient affected with numerous urinary fistulæ having allowed a portion of a bougie to escape into the bladder, M. Viguerie, sen., surgeon-in-chief to the Hotel Dieu de Toulouse, performed the perineal section. The urine flowed through the wound for forty days; but after that time it passed through the urethra; the fistulæ were cured spontaneously. This cure, effected by chance, led M. Viguerie to think that an incision upon the urethra might be had recourse to in some cases of obstinate fistulæ; and he has accordingly made trial of this operation in two cases. The subject of the first operation had long suffered from fistulæ, which had obstinately resisted the introduction of a sound. For three weeks after the incision was made the urine escaped by the wound, after which it returned to its proper channel: the fistulæ rapidly got well, but the wound was seven months cicatrising. The second patient is still under treatment in the hospital. New facts are necessary before any judgment can be formed on the merits of the operation; but the disease, for the cure of which it is recommended, is so obstinate and distressing, that any new suggestion for its treatment is deserving of favorable consideration.

[*London Medical and Surgical Journal, April* 1824.

45. *Foreign body in the œsophagus.*—Two children, one five, the other four years old, were playing together with a set of baby dishes: on a sudden the elder brother uttered a piercing shriek, and the younger one fell backwards. The mother rushed out and was told that the elder boy, seeing his brother put some of the plates into his mouth, had attempted to make him swallow one of them, and had pushed it down his throat with his finger. It was then that the child fell backwards.

The terrified mother carried her boy to Dr. Lecanu, who gave him a grain of tartar emetic in a spoonful of water; but he soon found that the foreign body was so placed as to obliterate completely the œsophagus, for the water flowed not into the stomach. I was sent for.

I found the little patient sitting on his mother's lap, his head thrown backwards, his face injected, his eye fixed and projecting, his jugulars swollen, his carotids beating violently, his mouth was foaming and bloody, his thoracic extremities stiffened, his pelvian limbs inflected, his abdominal parietes stretched.

I first attempted, but in vain, to provoke a vomit by tickling the fauces with a bearded pen. I then introduced into the mouth the index and the medius, and between the extended fingers slided into the œsophagus a gum-elastic tube. I soon came in contact with the foreign body, and found that I had introduced about four inches of the tube; the liquid which had remained above the obstacles flowed out, and whilst I was attempting to turn the sound, the child made an effort and vomited, I drew out the tube, and found the little plate in the child's mouth. It was about the size of a shilling. The child took an anodyne mixture a little afterwards, and the action had no further consequences. Yvan, *surg. at the milit. hosp. of the Gros-Caillou. Monthly Journal of Medico-Chirurgical Knowledge.*

46. *Extirpation of Scirrhus of the Rectum.*—A citizen of Bordeaux had for a long time a scirrhus tumor on the inside of the rectum. M. Delpech proposed an operation as the only chance of safety, without concealing its serious nature and dangers. It was practiced with the known ability of this celebrated surgeon. Compression and plugging were sufficient for controlling the flow of blood. But peritonitis supervened and death happened four days after the operation.—*Revue Medicale, Oct.* 1823. J. F.

47. *Torsion of Arteries—practised with success in amputation of the leg in the General Marine Hospital of Alexandria, Egypt.* By Dr. Clot-Bey.—On

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the 26th of July, 1833, in the General Marine Hospital, Dr. Grassi amputated the left leg in a case of comminuted fracture which had happened to an Arabian seaman. I proposed *torsion* of the arteries to the operator, and he requested me to perform it as he was not acquainted with the new method. With an ordinary ligature forceps, I seized successively the extremity of the anterior and that of the posterior tibial arteries, the only vessels which gave forth blood; and in drawing them towards me, I fixed the thumb and index finger of the left hand below the bite of the forceps, and turned them four or five times on their axis; after this I let go the vessel pushing it slightly into the surrounding tissues. The stump was left uncovered some minutes and I convinced myself that this means had entirely arrested the blood; I was not however altogether without fear. On covering and dressing the wound, I applied a tourniquet and confided it to the care of a pupil, that, in case hemorrhage should occur, he might immediately arrest it. The patient has reached the fourteenth day, and the wound has almost cicatrized, without there having been the least discharge of blood.

This case of *torsion* of the arteries is one of the first practised on man. It is not sufficient to establish the superiority of this method; but it will at least serve to encourage practitioners to try it.—*Revue Medicale, Nov.* 1833. J. F.

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48. *Cases of Gun-Shot Injuries of the Eye.* By JOHN BUTTER, M.D. F.R.S

CASE I.—*A duck-shot impacted in the Optic Nerve for above six years.*—Mr. H———, aged 50, came from Camborne, in Cornwall, and first consulted me at Plymouth, in Sept. 1830, on account of total blindness in his left eye, accompanied with very great pain occasionally, and considerable amaurotic affection (photopsia) of his right eye. He gave the following history:—On the 19th February, 1827. while shooting, a gun was fired at a woodcock by another person, and a shot lodged in his left eye-ball, producing instant blindness. For a fortnight afterwards he did not suffer greatly; but during the last four and a half years the pain would flash so suddenly and intensely, at times, through his left eye and head, and so seriously disturbed the visual functions of his sound, or right eye, that, in whatever occupation he was engaged, his sufferings obliged him to desist for a time, to apply leeches, and to resort to other remedial measures. The fear of losing also the sight of his sound eye from sympathy, added to the actual pain felt in his left, induced him to seek, and even to urge, the extraction, if possible, of the shot, which he knew from his acute feelings must be seated in some very sensitive part of his left eye.

The following appearances were exhibited:—His left eye was rather less in size than his right, but free entirely from inflammation. On the nasal side of the eye-ball a fistulous opening was perceived through the reflected conjunctiva and selerotica, nearer to the iris and cornea than the spot at which we usually introduce the needle in depression. I could pass a fine gold probe through this opening, nearly into the posterior chamber; it was evidently the entrance of the shot. The iris was not materially altered. A cataract behind it could be distinctly seen.

In a consultation with my colleague, the late Mr. J. H. Luscombe, one of the surgeons to the Plymouth Eye Infirmary, we agreed at first to dissuade Mr. H. against an operation, or any attempt to search for a shot, the position of which was extremely doubtful and uncertain; but it was the wish of our patient that some trial should be made.

On the 9th September, 1831, aided by Mr. Luscombe, and Mr. Lanyon, jun., a very promising young surgeon from Camborne, and Mr. H.'s medical attendant, I extracted the cataract, which consisted of calcareous matter and spiculæ of bone. I afterwards syringed out some gritty matter from its bed. We all hoped that the removal of this bony lens might have been followed with corresponding relief, thinking that the ciliary process had been irritated by its pressure and hardness, in such a manner as to account for the principal symptoms. In this hope and expectation we were disappointed; for on 23d February, 1833, Mr. H. came back to Plymouth, having returned from hence

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to his home on 6th October, 1831 (twenty-seven days after the first operation,) and requested me to make a further attempt for the removal of the shot, which his feelings denoted still remained within his eye, and caused those sympathetic sensations (amaurosis) in his right eye, the sight of which being now endangered, he was most anxious to preserve. He pointed to a blueish and prominent part of his left eye, underneath which he considered that the shot must be lodged. Indeed, this idea seemed very probable to myself and to my brother, a surgeon at Sympstone, then on a visit here, who assisted me in hooking up this prominent portion of the sclerotica, which I excised with the scissors, and made an aperture sufficiently large to enable me to explore with the probe the internal concavity of the eye, and to allow the exit of the vitreous humour. Still no shot was found. It is needless to say that this second operation disappointed us all; but Mr. H. determined to have his whole eye extirpated at a future period, should not his complaints be alleviated by the suppuration which followed this other attempt.

At his request, on 23d September, 1833, I removed the whole of his left eye-ball, with its lachrymal gland, and divided the optic nerve far back in its socket, close to the foramen opticum, fearing that I might still miss the object of our pursuit. On dissection afterwards, I had the greatest satisfaction to find a duck-shot, impacted so firmly in that part of the optic nerve which expands and forms the retina, that a considerable effort was required to detach it from its bed, in which it must have been fixed *for six years and six months*, closely embraced by the nerve. Such was the patient's extreme fortitude and perseverance, that not even was his hand raised, nor a syllable of complaint uttered, during this most painful operation, in which I was very kindly assisted by Drs. E. Moore and Rendle, the present surgeons of the Plymouth Eye Infirmary, and also by Mr. Square, a very intelligent pupil of the same. The preparation of the shot, *in situ*, I have preserved for my own collection.

At the end of a fortnight the patient was nearly well; but for three weeks afterwards he was detained by adhesions which formed between the lids and subjacent parts, and which I repeatedly divided. Some morbid sensations were felt in the ophthalmic branch of the fifth pair of nerves, and also in the ramifications of the superior maxillary, resembling *tic douloureux*, which I trust the carbonate of iron, taken in large doses, and vinum opii applied externally, will effectually remove. Mr. H. returned from Plymouth to Camborne on the 9th November, 1833 (about forty-seven days after the third operation.) In his last letter he writes that the strength of his right eye increases daily, and that the neuralgic complaints in his face also decrease. A glass eye has been fixed in, to correspond with the other; but the parts are too tender yet to bear it.

Case II.—*Sudden Blindness from the supposed rebound of a grain of shot off the Eye ball.*—On the 1st September, 1830, I was sent for to visit T. R., Esq., æt. 41, living at Venn, near Tavistock, about fifteen miles from Plymouth. During my absence, Mr. Luscombe, one of the surgeons to the Plymouth Eye Infirmary, went over to see him. Mr. R. had the kindness to call upon me on the 23d December, 1833, and at my request to explain the particulars of his case in the following manner:—Whilst shooting partridges on the morning of the 1st of September, 1830, he received in his left eye a shot, a part of the contents of a fowling-piece, fired by a young gentleman, through a thorn bush in a hedge, at a partridge. Three shot holes were made in his hat. The immediate effect to him was a sensation like a flash of fire or lightning, quickly followed by total blindness, and very considerable tumefaction of the left lids and eye. The anterior chamber was soon filled with blood, which produced a red appearance resembling the color of a ferret's eye, or rather of a Mazard cherry. Mr. R. was conveyed home, and blooded three times on that night, and about thirty leeches were applied to the swollen parts and temple; so that neither any serious inflammation nor pain followed the accident from that time to the present. The effused blood in course of time became absorbed, and with it some portion of the vitreous and chrystalline humors, as the left eye is perceptibly diminished in size. The transparency of the cornea, however is pre-

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served, with the form of the eye; but the iris is altered to a tawny color, corrugated at its margin, and agglutinated to the capsule of the opaque lens. Not the least light can be discerned with his left eye; but fortunately its defects have not at all interfered with the vision of his right, or sound eye; on the contrary, he thinks he can see objects at a distance more clearly than he ever could do. There is an indentation in the sclerotica, which I think arises from a diminution in the size of his left eye, and not upon any wound or aperture ever existing there. His feelings do not give the least intimation of any foreign body in his eye; and his wonder is, where the shot could have entered, or where it can now be lodged. The most extraordinary part of this accident is, that no person should ever have been able to discover any precise spot at which a shot could have entered the eye-ball, nor the side it could have struck. Some surgeons have conjectured that the optic nerve was divided by the shot, and that its division would account for the suddenness of the blindness, and absence of pain; whilst others imagine that the shot must still be lodged in the adipose and insensible parts of the orbit, or in the bones; but the most probable supposition, in my opinion, is, that no shot ever penetrated through the coats of the eye, but merely struck violently against the eye-ball in an oblique direction, and bounded off, bruising the external or temporal side, and bursting some blood-vessels in the iris and retina within the eye, which immediately effused blood, the coloring particles of which being absorbed, a dense coat of lymph remained, became organized, and rendered the retina opaque and insensible to light.

Case III.—*A full charge of shot received in the face—Confusion of Vision.* So far back as the year 1814, a gentleman, æt 33, travelled from Blackburn, in Lancashire, to Plymouth to consult me respecting his eyes. Six years before, he had received in his face the full charge of a fowling-piece, ostensibly fired over a hedge at a partridge, by a near relation, who, there were subsequent reasons to fear, had designed to do him this mischief through base and interested motives. Shots had penetrated different parts of his face, and one had evidently entered the upper part of the sclerotica of his left eye, about two lines from the iris; but it did not appear that his right eye had been wounded. For many days after this accident he continued quite blind, owing to the swelling of the integuments of his face. The right eye could be opened first, and the light of a candle faintly seen with it; but with the left eye, opened two or three days afterwards, nothing could be seen. The sight of his right eye returned so far as to enable him to read and write a little, and to walk about; but that of the left scarcely returned in any degree for six months, when, strange to relate, it began to improve, and even to surpass the sight of his right eye, which, equally strange to say, began then to decline, and to confuse his vision altogether.

From that time every object appeared to be confused and double (diplopia) when both eyes were opened, but only single when one eye was closed; and always more obscure to the right than the left, especially in an evening, when his vision is much better with his left or injured eye, than with his right (hemeralopia.) All the parts of his right appear natural; but the iris of his left was torn at its upper margin, and rendered perpendicularly oblong instead of circular. The shot pierced the sclerotica about two lines from the iris, which was torn, but neither injured the lens nor its capsule. Belladonna acted more freely on the injured iris of the left than on the right. After dilatation with belladonna, the irides took a long time to contract to their proper form. Both lenses were transparent. The vitreous humour looked blueish in both eyes. On looking at any one object, two always appeared—viz. the original, seen with the left, or injured eye, in its relative position and proper distance; and the shadow, much nearer, and always to the left of the proper spot, when viewed with the right eye alone. If he looked at a river, a fire, a burning candle, or any luminous body, the effect was the same. A person passing in the street looked like two—natural when viewed with the left eye, but faintly represented

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and misplaced with the right. This confusion often caused him to run against people. He remained at Plymouth about three weeks, under my care, and returned to Lancashire with his left eye somewhat improved.

CASE IV.—*Piece of a copper cap struck into the Eye—Extraction—Cure.* Mr. K., jun. accompanied by his father, a highly respectable surgeon at Devonport, came to my house, in Plymouth, about nine o'clock, A.M. on Saturday the 16th May, 1829, on account of an accident which had happened to him about an hour before. In blasting off a gun, a piece of the copper cap with which the patent lock was charged, flew off, and struck into the centre of the cornea of his left eye, in front of the pupil, fixing itself between the laminæ, from which I considered at first there could be no great difficulty in removing it. During his father's absence from my house, not exceeding fifteen or twenty minutes, in fetching some instruments from the Eye Infirmary, the piece of copper had cut its way entirely through the cornea, and floated to and fro in the anterior chamber, falling occasionally to the bottom with some aqueous humor, a part of which had escaped through the wound, and the cornea itself became flaccid. Instead, therefore, of a simple, I now prepared for a very difficult operation, and found the task of perforating the collapsed cornea, with an extracting knife, by no means easy.

When I had made a section, the piece of copper became wedged between the cornea and iris, then brought into contact, and was lost out of sight for a time amidst the fibres of the iris, from which, after repeated trials with different instruments, I extracted it with the forceps, and drew out likewise some portion of the fibres of the iris, entwined around a hooked corner of the copper. Some part of these fibres I snipped off, and replaced the rest with as much care as possible, closing the incised lips of the cornea over the same. After so tedious and painful an operation—borne by my young friend with the most heroic fortitude—in which I was ably assisted by Mr. K. and Dr. E. Moore, senior surgeon to the Plymouth Eye Infirmary, I prepared the father for the worst of consequences—for the loss of the eye, or at all events, for iritis of the most violent kind. My expression to him was—you must not allow inflammation to arise; you must bleed freely, and purge, and then give him small doses of calomel and opium every three hours; and you must strive and keep your son in bed, quietly, and in a dark room, until the cornea and iris are healed, and every symptom of pain, or tendency to inflammation, is removed.

Never were injunctions more implicitly followed. The anxious and skilful father allowed no inflammation to arise; he met every change promptly, and watched his son's progress, night and day, with the most paternal vigilance. After so gloomy a prospect, never did a case turn out more fortunately. No bad symptoms appeared, without an immediate remedy. Mr. K. jun., was blooded four times from his arm, had thirty-six leeches applied, and took only about eleven or twelve grains of calomel, before complete salivation ensued. Excepting a slight drag of the pupil downwards, making it somewhat perpendicular, like a cat's eye, by an adhesion to the cornea—and excepting also a black spot at the junction of the iris and cornea, on the temporal and maxillary side, shewing the dark urea underneath the spot from whence a portion of the iris was removed—no difference can be perceived between his left and right eye; and, indeed, a common observer could not find out any alteration. The circular and radiated fibres of the iris have preserved nearly all their original powers of contraction and dilatation; but in a very strong light, the under fibres cannot close quite to the same extent as formerly, and then some inconvenience may be experienced. The sight of the eye is quite as perfect as it was prior to the accident. It is most worthy of remark, that both the wounds made in the cornea, the first through its centre by the copper, and the second by myself, healed without the slightest speck or opacity, or interruption to vision; and it is equally remarkable that the capsule of the lens was neither cut, nor bursted, nor injured by the copper undulating and repassing over the parts. For so grave and serious an accident, the result was singularly fortunate.—*London Medical Gazette, April* 1834.

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49. *Varicose Veins.* By Frances Simpson. We read of the ancients placing their sick and afflicted in "the high-ways and public places," that some one passing by, who, like them, had been afflicted, might tell of a remedy; you, Sir, will not, therefore, I trust, object to give a place in the Lancet to the following (merely because it is non-professionally given,) and I will be as brief as I can in stating what has invariably proved with me a remedy, and sometimes a very quick one, in that distressing disease of the legs, varicose veins. I have, through excessive fatigue, (being sometimes without rest for ten or eleven nights together,) been very subject to varicose veins; and, during the period of twenty-five years past, I have met with a great number of females in like manner afflicted. All these, as well as myself, have been cured, whenever placed upon an isolated stool, and had the electric sparks drawn from the leg along the veins affected, beginning at the *extremity* of the swelling of the veins. Under this mode the swellings soon subside, without ever requiring a bandage. For me, in my business, this is an unspeakable advantage, for I could not do to be bandaged, and, without electricity, I think I could not long follow my business, for whenever I have neglected to have recourse to it in time, I have found, that although the vein itself did not *rupture*, a wound would begin to form even at a distance from that part of the vein most affected, and most likely to burst. The skin of a distant part of the leg will, in some instances, be abraded without any visible cause, and a thin ichor run from the part, a part which, to a superficial observer, would appear to have no connexion whatever with the varicose veins; but spark the veins and restore them to a healthy state, and this wound immediately skins over and becomes sound.

With a view of keeping my promise of "brevity," I shall only add, that in cases where, unhappily, deep ulcers have been formed, the "wooden point," so called, must be used, for I have known instances where it has been used with very great effect; it cools the wound and brings on a disposition to heal, by the wound secreting a much more laudable species of matter.—*The Lancet, Ap.* 1834.

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50. *Clinical Observations on Fractures of the Neck of the Femur.* By Baron Dupuytren.—*Age at which such fractures occur.*—Fractures of the neck of the femur have attracted so much attention of late years, that we are told in most *ex professo* treatises on such subjects, that they are as well understood as those of other parts of the thigh bone. Those, however, who have witnessed the practice of the Hotel Dieu during the past winter, must be aware that much additional light has lately been thrown upon the subject. If you examine, said M. Dupuytren, the age of different individuals who are at this moment in our wards with fractures of this part, you will perceive that they are all past 50 years of age; and among those to be hereafter pointed out to you, you will remark that there are no children, and in general very few adults. But in both sexes you find this accident more common after 60 years of age. Never in any instance were the predisposing and exciting causes more conspicuous than here. I have never seen fracture of the neck of the thigh in an infant, and very rarely in a young person. Sabatier, however, in his interesting memoir in the transactions of the old Academy of Medicine, mentions the case of a youth of 15, who had a fracture of this kind. These lesions, on the contrary, become more frequent as life advances, and are most common between 70 and 80 years of age. It is impossible but that there must be some cause for this difference in the period of fracture of the neck of the femur at different epochs of life.

Predisposing Causes.—This cause is well ascertained, and resides in the anatomical disposition of the parts; which is not the same at different ages. The neck of the femur, in fact, has not at all periods of life the same direction; and this disposition of the parts is important to be known. In early life the axis of the neck approaches to that of the body of the femur; the angle which it forms being the most open possible. The great trochanter makes but a very small projection; and we shall see by and by that falls upon this part are the most frequent cause of fracture of the neck of the femur;—that

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the frequency of the accident is in direct proportion to the extent to which the trochanter projects;—and that such projection is in direct proportion to the length of the neck of the bone, and the greater or smaller angle which it forms with the bone. Now we know that the trochanter lies deep in children, and that it hides itself, so to speak, behind the prominence of the os coxæ; the result of this is, that in falls on the side the blow does not come upon it, and consequently the risk of the fracture is diminished. Another anatomical disposition renders fracture of the neck still more difficult. The shorter the bone is, the less of a right angle it makes with the body, and consequently the more it approaches the direction of the axis of the femur, and the causes of fracture have therefore less influence on the neck. There is also another reason why fractures of the neck of the femur are rare at an early age—namely, the great flexibility of the bony tissue, in consequence of the abundance of organic matter in the bone. In adult age, fracture of the neck of the femur, but less so than in infancy, the earthy matters are more abundant than at an earlier age, but less so than they subsequently become. The neck also presents a different disposition: it is larger, and the angle which it forms with the body is much more marked than in the child. There results from this more projection of the great trochanter, and consequently more purchase for the causes tending to produce fracture to act upon. This greater length of the neck of the femur, however, and this projection of the trochanter vary according to sex and individual peculiarities. Women have the neck of the femur longer, and consequently a more projecting trochanter than men. The nearer in the male sex, the formation approaches to that proper to the female, the more risk is there in this fracture.

If the relief of the muscles of the haunch in men presents an obstacle to the production of fracture by diminishing the effect of falls upon the great trochanter, the thickness of the layer of fat in women fulfils the same indication: but when there is much emaciation present, women become more liable than men to the accident. Let us next inquire how it happens that old men are so much exposed to this kind of fracture. At this period of life the pelvis has acquired all its breadth: the trochanter major is more projecting; the neck of the femur longer, and inclined to a right angle. Besides, the skeleton of the old man weighs much less than that of a young adult, which depends upon the bones having lost much of their organic substance,—having a greater quantity of earthy matters, and being thus also more friable. In aged women, while the anatomical disposition retains the peculiarities formerly mentioned, the friability is even more marked than in men. Accordingly at the Salpetrière, which is an asylum for old women, there are more cases of this nature than at the Bicêtre, which is a receptacle for old men. These considerations are of importance in reference to the theory of fractures. Thus in the child the cure may be affected in three weeks or a month, while in the adult it will require a much longer period; and in those advanced in life, a hundred, or a hundred and twenty days are required.

If we recapitulate briefly what we have said with respect to the predisposing causes of this fracture, we shall see that shortness of the neck of the femur; very considerable openness of the angle which it makes with the body; deficiency in the projection of the great trochanter; flexibility of the osseous tissue; abundance of adipose matter; render it almost impossible that fracture of the neck of the femur should take place in children. In women, the less considerable obliquity of the neck relatively to the axis of the body of the bone, the length and prominence of the great trochanter, explain the greater frequency of this accident in them than in men. Sir Astley Cooper has said that fracture of the neck of the femur rarely took place before the age of fifty; but there are many exceptions to this rule. There are also some other particular circumstances which predispose to fracture of the neck of the femur—such as rachitis and cancerous diathesis; but as these are common to all parts of the osseous system, it is unnecessary to dwell upon them here.

Exciting causes.—What, then, are the exciting causes of this fracture?

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Almost all the patients whom we interrogate reply that they have fallen on the great trochanter, and in such manner that they have been unable to protect themselves with the arm, as is usually done instinctively. The frequency of this cause has been recognised by all authors. Thus of thirty-six cases observed by Desault, twenty-four were produced by falls of this kind. In infants and young persons who have fallen on this part, and who have been preserved from fracture, we meet with decollation of the epiphysis. Falls upon the trochanter are, however, far from being the sole cause of fracture of the neck of the femur; I shall point out others which play an important part; but I must first make a remark which has excited little attention; namely, that at the same time the patients fracture the bone they bruise the external parts. I this morning examined a woman who stuttered, and answered badly the questions put to her; but on touching the great trochanter it gave her much pain, although the limb was not moved; and this led me to examine the part, when I found a large ecchymosis upon it. This fact is of some importance in directing us to the part which the patient has struck, when he is himself unable to give an account of his fall.

I have said that other causes might produce fracture of the neck. This is, in fact, what happens in a fall on the soles of the feet, or still more upon the knees; but in both cases it is necessary that the muscles be stretched and inflexible. Sir Astley Cooper has observed that in London, fracture of the neck of the femur, often arises from a false step off the edge of the pavement. Under such circumstances the head of the femur impinges strongly against the cotyloid cavity: from this there results an effort tending to diminish the angle which the neck makes with the body of the femur. I have also frequently observed a depression of the cotyloid cavity produced by the head of the femur, in consequence of a fall on the feet or knees.

It is not from this cause, however, but from a fall on the haunch, that this accident generally happens. In this case the neck is placed between two opposite forces; the head of the bone being pressed on the one side by the weight of the body, while the great trochanter is opposed by that against which it strikes, and the point which most usually gives way is that immediately under the head of the bone, at the upper and internal part of its neck.

It has also been thought that this fracture may arise simply from a muscular exertion, and a case is quoted in which this is said to have taken place in a negro affected with tetanus.

Diagnosis.—This fracture may likewise arise from causes directly applied. These are usually projectiles—such as cannon balls, several instances of which I saw after the days of July.

The diagnosis of fracture of the neck of the thigh bone is not made without difficulty. It sometimes happens that a fall on the haunch, accompanied by bruising of the muscles and joints, imitate this fracture, while, on the other hand, the same cause may produce an actual solution of continuity, and yet the patient be able to run and walk. It is thus that persons have been known after they had fractured the neck of the femur, to be able to reach home without presenting any shortening: it is thus that displacement of the fragments does not take place till after some hours, or even many days, either in consequence of some movement on the part of the patient, or of the examination made with a view of ascertaining the nature of the malady. Before we proceed, let us say a few words with regard to the cause of this consecutive displacement.

Secondary displacement.—It is known that at the first period of its formation; the callus of long bones often yields and produces deformities, when a perfect cure has been expected. Who has not seen oblique fractures of the femur give way under the weight imposed upon it when the patient began to walk again, at a time when all risk seemed to be at an end? The same thing happens in fractures of the neck of the femur. At the end of two or three months the provisional callus yields beneath the weight when the patient rests upon it, and shortening is the result. I have seen this at the end of two,

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three, and four months. It is therefore necessary that patients should be controlled by the proper apparatus, during 100, 120 or 140 days, or even more.

The weight of the limb, and still more that of the body on the broken part, is to be regarded as the great cause of displacement, whether primitive or consecutive. But another active power in producing displacement consists in the prolonged action of the cause which has given rise to the fracture. It sometimes happens that it buries the upper fragments in the thickness of the spongy tissue of the superior extremity of the lower fragment, and consolidation takes place in this situation rather quickly. Numerous anatomical preparations in the museum of the Hôtel Dieu exhibit this phenomenon, and sufficiently demonstrate the reality of its existence. Lastly, there exists another cause of displacement in fractures in the neck of the femur—namely, muscular action.

The primitive symptoms take place when, in a fall upon the heel or the knee, the shortening and displacement take place at the moment. In this case it is clear that, the upper fragment remaining in its place, the lower one is pushed up by the weight of the body. But a vertical fall is the least common cause of fracture of the neck of the femur; and when, as is most common, the blow is received on the trochanter, the cause tends not to shorten but to lengthen the limb. There exists, then, another cause of this shortening, which has until now been but little understood. It depends upon the adductor muscles, which, being designed to carry the limb outwards when it has rotated, are inserted on one side in the ischium, and on the other terminate behind and along the linea aspera of the femur. It is on these that the displacement, and, in part at least, the shortening depends.

When there is displacement, the fracture is always easily recognized; but when this is not the case, the nature of the mischief may be suspected—without, however, being placed beyond doubt. I suppose that the symptoms are well characterized; that there is shortening, displacement of the limb outwards, and inability on the part of the patient to raise himself: it is necessary then to inquire if the limb preserves this shortening; or may be made to lose it by extension, and if the great trochanter turns on the axis of the femur, or on the extremity of the lever.

If the shortening is only some lines, it is difficult to distinguish it from that which is produced by an upward movement of the pelvis, caused by the contusion: the diagnosis becomes more evident if it extends to half an inch or more. Displacement, however, may also depend on luxuation of the head of the femur, or upon an ascent of the pelvis. In luxation forwards, the head of the femur passes on the horizontal branch of the os pubis—then there is shortening; but the cause is detected by the hard tumor which may be felt to roll when the femur is moved. In luxuation into the sub-pubic region the member is also turned outwards, but it is elongated; and there is in this situation an enlargement and unusual tension of the muscles.

In luxation upwards and outwards, the head of the femur is in the external iliac fossa: the limb is shortened, but the point of the foot and the patella are turned inwards, the heel being thrown out.

There is, finally, a luxation downwards and backwards, which I have only observed two or three times: the limb is then turned inwards, and sometimes a little elongated, and it cannot be brought into its ordinary state except by the effort of reduction, and, once reduced, the displacement does not again recur. Thus, the distinctive character is as follows:—shortening produced by a fracture yields to the smallest effort at elongation: shortening produced by a dislocation is more difficult to remove, but once reduced, the deformity disappears.

Let us now inquire what are the material effects of these fractures upon the bones, beginning with the glenoid cavity. I have found this cavity driven in several times by the head of the femur: this accident was produced by a fall on the feet or knees. In this case, the head of the femur impinges with violence against the bottom of the cavity, and being the more resistant, breaks it. The most remarkable case which I have observed was this: the bottom of the glenoid cavity had been driven in, and the head of the femur, which remained entire,

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had passed completely into the pelvis; the neck, which had not experienced any solution of continuity, was so firmly locked in this accidental opening, that it was very difficult in the preparation to disengage it, and thus reduce this new kind of dislocation. In other cases, the cotyloid cavity is broken without the head of the bone being displaced; but the most common effect of the fracture is to be seen at the upper extremity of the femur in the radiated comminution of the head of the bone, the neck remaining entire. The most common cause producing this accident is a gun-shot wound acting directly on the part; though it also arises from falls on the great trochanter, and even on the soles of the feet.

The neck, however, is much more frequently the seat of fracture, because it forms a lever. Its diminished size towards its middle part also contributes to the production of the fracture. This may take place from below upwards; or from above downwards, depending upon the manner in which the fall occurs; but usually it is at the base of the neck that the fracture takes place: there are, however, infinite varieties in this respect.

M. Dupuytren's Opinion of Sir A. Cooper's Views.—I request you to observe, that according to the seat of these fractures they are called intra-capsular, or extra-capsular; and it is a distinction which has been much dwelt upon, because many practitioners think that it is difficult, or impossible, that the consolidation of the fracture can be effected when it has taken place within the capsule; while they admit that it is possible, and even easy, when it has taken place without the capsule. Astley Cooper, whose authority is so imposing in surgery, says expressly, that in all cases of transverse fracture of the neck of the femur within the capsular ligament, which he has had occasion to examine, he has never found bony callus; and he is persuaded that it is impossible; he has also made experiments upon living animals, which have confirmed him in his opinion; and the English surgeons have equally adopted the doctrine of their countryman.

But to the facts which they adduce in support of this non-consolidation, numerous facts of an opposite nature may be advanced. A considerable number of anatomical preparations show intra-capsular fractures exceedingly well united; and those which exist in the cabinets of the faculty at Paris, and the school at the Hôtel Dieu, prove that this consolidation, with or without deformity, is real. Sir Astley Cooper has probably only seen fractures of the neck of the femur, which have not been cured, which have been treated ill, or not treated at all. This is the only way of explaining the opinion of the English surgeon, which is evidently erroneous. An examination, however, of these anatomical preparations, though eminently calculated to convince us of the reality of this union of fracture within the capsule, does not appear to have produced this effect on the other English surgeons who have visited our museum. Mr. Cross says he has attentively examined the preparations in the School of Medicine at Paris, and that none of them appear to him calculated to prove that bony union ever takes place, when the head has been completely separated from the capsular ligament. When one has seen the preparations at the Hôtel Dieu, which every person may examine at leisure, if he then denies the possibility of consolidation within the capsule, of a surety, I know not of what nature the proofs would require to be to produce conviction. For myself, I regard this consolidation as demonstrated, despite of what the English surgeons say.

Of the indications of Cure in Fractures of the Neck of the Femur.—At first sight one might suppose that it was the same in fractures of the neck of the thigh bone as in other solutions of continuity—that it was sufficient to replace the fragments and maintain them in contact. But how many difficulties present themselves? How are fractures of this kind to be produced? Are we to use powerful extension and counter extension? Certainly not; because we should thus increase the tension of the muscles, which is already very great. In luxation this may be effected by diverting the attention of the patient, and seizing that moment to produce the reduction. But in fractures this cannot be done, because the attention of the patient is concentrated on the injury. Another method of overcoming muscular action is to place the limb in a state of flexion, as recommended by Pott in fractures generally. I believe I am the first who ap-

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plied these rules to fracture of the neck of the femur. I suppose, that in a case of this kind, extension and counter extension have been used: it is evident that, if the limb be placed in a state of flexion, no difficulty is experienced in overcoming the displacement as to length and turning. But how are the fragments to be kept in contact? I suppose that the fracture of the neck of the femur is transverse, and that this part is divided into two halves; it may then easily be reduced; but the difficulty is to maintain it so, because the fragments are not placed fronting each other. Suppose, now, that the fracture is oblique; if the patient attempts to walk the lower fragment impinges slightly upon the upper one: this fragment, then, will offer some obstacle to its displacement; so that this is less easy than in a perpendicular fracture.

The general indication, then, is to reduce the fragments, and keep them in contact; and the principle established by Pott fulfils this purpose, by preventing the muscles from contracting; but, in order to obtain consolidation, it is necessary to employ at least twice as long a time as in fractures of the body of the bone; while it is necessary to add twenty, thirty, or forty days more, in order to obviate the risk of displacement occurring when the patient begins to walk. If this treatment be pursued, I venture to assert, that secondary displacement scarcely ever occurs,—that, when it does happen, it is extremely slight.

The best method of effecting reduction of fractures in general, and that of the neck of the femur in particular, is to diminish the resistance of the muscles, by placing them in a state of relaxation or demi-flexion, as you see us do every day, in the following manner:—The patient being laid on his back, and his pelvis fixed by means of assistants, the thigh is bent on the abdomen, by raising it, and making moderate traction; the limb is also bent upon the thigh. Scarcely is this done, when, without difficulty and without effort, the limb resumes its ordinary length, and the foot its natural direction.—*London Medical Gazette, April,* 1834.

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51. *On Perforation of Strictures of the Urethra,* by R. A. Stafford.—Case I.—*Impermeable Stricture of from twenty to thirty years standing—Failure of Bougies and Caustic—Cure by the Lancetted Stilette.*—George Stevens, æt. 56, was admitted into the St. Marylebone Infirmary, January 14, 1831, with an impermeable stricture, situated at the bulb. He had been afflicted with this disease, (which originated from gonorrhœa,) from between twenty to thirty years, and latterly has suffered so much from it, that he thinks the irritation of the urinary organs brought on a paralytic seizure of the left side, which he has now labored under for more than a year. For some years past, he has made water only drop by drop, and the bladder can never entirely empty itself. The urine is of an alkaline character, and mucus is deposited at the bottom of the vessel in which it is contained. Bougies, caustic and other means, from time to time, have been employed, but never with any relief. About a week after his admission, I made an attempt to perforate the stricture, and got through half an inch of it. The part was kept open by passing a bougie every other day. He suffered no pain nor constitutional symptoms that required more than fomenting the perineum, and taking an occasional aperient. In a week from the last operation, I again employed the lancetted stilette, and at once succeeded in perforating the obstructed part in the canal. A small gum elastic catheter was immediately passed into the bladder, and left there. In two days this was changed to one twice its size. The catheter now produced considerable irritation, so that it was left off altogether. Bougies and steel dilators were, consequently passed every second or third day, until the strictured part was as large as the rest of the canal. On March 15, he left the hospital, and could make water in a full sized stream.

Remarks.—It is not improbable that the irritation produced by the stricture brought on the paralytic affection. The sympathy between the urinary organs and the brain is very remarkable. Hence we frequently see diseases of the kidney, bladder, and urethra, terminate in urinary coma and serous apoplexy. This case could not have been treated successfully by any other plan. It had resisted the common modes—bougies and the application of caustic. Division

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from the perineum, independently of its uncertainty, would most probably, from the severity of the operation and the state of the patient, have caused death. The milder, and perhaps the most natural method, was the one pursued—perforation of the stricture within the canal of the urethra.

Case II.—*Impermeable Stricture of thirty years standing, in a man of seventy-two years of age, cured by the Lancetted Stilette, or Urethral Perforator.*—Mr. R., æt. 72, came from the country in May, 1831, to consult me concerning the state of his urethra, which had been the source of considerable annoyance to him for at least thirty years; and latterly the malady had so much increased, that he was in constant irritation and pain. He could only pass his urine guttatim, and he was constantly obliged to rise during the night to attempt to make water, but he could never empty the bladder. He was in a miserable condition, being much worn and enfeebled; and, as he expressed himself, all he wished was to spend his latter days in a tolerable degree of comfort. On examining the urethra, I found a stricture immediately behind the bulb, which was impermeable to a bougie. The lancetted stilette, or urethral perforator, was passed to the part, and the stricture was at once perforated. A small catheter was introduced into the bladder, and its size was increased every two days. In a week from the operation they were left off. Steel dilators were now passed every second or third day, until a No. 12 could be introduced with ease. In a month or five weeks he went into the country again, perfectly well; the pain and irritation had ceased; he was enabled to sleep during the whole night without being under the necessity of rising, and he could make water in full-sized stream. The auxiliary treatment was by aperients, frequently soothing the urethra by fomentations; and when inflammatory symptoms arose, applying leeches to the perineum.

Remarks.—This case shews, that even at a very advanced period of life this treatment may be employed without danger. Considering the enfeebled state of the patient, and the duration of the disease, the immediate relief obtained is remarkable.

Case III.—*Two Strictures perforated by the Lancetted Stilette; one three inches from the orifice, and the other at the entrance into the membranous portion of the Urethra.*—The history of the early part of this case may perhaps be best described in the patient's own words.

"Previously to the beginning of the year 1818, I had several claps and some trifling stricture, which I have strong reason to believe were eradicated, in the early part of this year, by the use of bougies, &c. I remained well till October, 1823, when I again got a clap, which was renewed in the early part of 1824, and from which I think the commencement of the stricture may perhaps be dated, as I recollect having considerable difficulty in making water in August and September, 1825. I applied to a medical gentleman at that time, from whose treatment I received considerable relief. But I believe this difficulty in voiding my water did not wholly arise from stricture, but in a considerable degree from the state of the bladder, probably occasioned by stricture, as there was a great deal of sediment or mucus in my water, and which entirely separated from it after standing some time. Although I did not make water in a sufficient stream, yet I did not perceive myself getting much worse until the beginning of 1829, when I think I began to get gradually worse, and still kept neglecting myself, with the exception of several times, (during that year and the beginning of 1830,) taking something prescribed by a medical gentleman to relieve the bladder, not being aware that stricture existed to the extent which turned out to be the case. For several months previously to putting myself under your care, in October, 1831, I had considerable difficulty in holding my water; in fact, I could not at all times prevent its voluntary dribbling away. I must also observe, that for several years (say four or five,) I have had cause to make water oftener than a person free from disease, and voided it in a smaller stream, and in less quantities, than ought to be the case. This propensity has also increased within the last eighteen months or two years, until it has passed only by drops.—R. B."

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When I first saw this gentleman, I found him to be in a highly nervous state. He was much in the situation he has described—passing his urine guttatim, having frequent rigors, a discharge and being almost always in pain. A stricture, impassable by a bougie, was present, three inches from the orifice, and its indurated structure could be felt externally by taking the part between the finger and thumb. After having soothed the urethra by bleeding, fomenting, and administering anodynes and aperients, the straight urethral perforator was passed to the part; and by three incisions with the lancet, the stricture was divided. But little pain was felt, and only a few drops of blood followed. A small catheter was passed, with the view of leaving it in the bladder; its progress, however, was arrested at the entrance into the membranous portion. In consequence of this second stricture, steel dilators only were passed every day through the first, until it was enlarged to the natural size of the urethra.

The patient having business in the country, left town for two months. He felt himself much relieved from the first operation; and on his return the other stricture was perforated. A catheter was left in the bladder for a week, and followed up by passing steel dilators. He went into the country, having lost all his distressing symptoms, and could void his urine in a full stream. He was desired to pass a catheter once every week for the present, and to do it as often as required afterwards.

Remarks.—The presence of two strictures in the urethra at so great a distance from one another, would have made the operation of their division from the perineum unadvisable; for as soon as one had been operated upon, another would have been found four inches from it; and thus it would have been necessary to have laid open at least four or five inches of the urethra. The time it would have taken to have repaired so much injury done to the canal, would, of course, have been considerable, besides the uncertainty of its ultimate accomplishment. The perforation of the strictures was attended with little pain or loss of blood; but little confinement was required, and the cure was complete.

Case IV.—*Stricture of twenty-five years standing, where the Caustic and Potassa Fusa had failed, perforated successfully.*—May, 1833, Mr. W. æt. 47. In his youth, when he was about 20, this gentleman had contracted a gonorrhœa, for the cure of which he had used strong injections. The discharge ceased, and he thought no more of the disease until two years afterwards, when he found that the stream of urine became smaller and smaller, until it was about the size of a packthread. He consulted his surgeon, who employed bougies, and dilated the stricture. Being a good deal in the sporting world, he neglected himself for some years, and lived pretty freely. The stricture gradually returned, and got worse. The part at length entirely closed up, and he could void his urine only drop by drop. He now applied to his surgeon again, who employed the caustic and potassa fusa. Neither of these had any effect in destroying the stricture. He went on in this miserable state for a few years, when his health began to suffer. In May, 1830, he applied to me. He was in a highly nervous condition, and was very timid. I found a stricture situated only two inches from the orifice: it was indurated, and quite impassable by a bougie. He would not consent to my operating with a larger instrument than a small No. 4. I perforated the stricture, which was about half an inch in length, with this instrument, and then passed a gum elastic catheter into the bladder. He could not bear the catheter to remain longer than a few hours; it was therefore withdrawn. Bougies were now passed every day, and the sizes increased as the patient could bear them. In five days a No. 6 catheter could be passed; but on that day he received a communication that his wife was dangerously ill in the country. He immediately left London, and I did not hear from him until a year afterwards, when I received the following account. He says, "you no doubt have ere this condemned me for neglect or indifference from not writing you. I was so unfortunate as to take a severe cold, either before I left town or on my journey down, as to lay me up with a severe attack of rheumatic fever three days after I got to Sheffield; I have been confined to my bed and

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room ever since. I am now much better; and as the weather gets warmer, no doubt I shall soon be better. With regard to the other complaint, the stricture, I am happy to say I have not retrogaded, which is a wonder, considering the helpless state I have been in, not being able to introduce the catheter regularly. I can now pass a sound (No. 7,) a size larger than the silver catheter you lent me."

Remarks.—There is but little doubt that had this gentleman remained under my care, he would have got well. His being obliged to leave town just at the time he did was very unfortunate: it was still more unfortunate that he got an attack of the rheumatic fever. It was gratifying to find, however, when a bougie had not been passed for a whole year after the operation, that a No. 7 sound could be introduced into the bladder.

Case V.—*Stricture that had resisted bougies and all Urethral Instruments, perforated and cured.*—Geo. Pace, æt. 20, was sent to me by my friend Mr. Evans, surgeon, of Hampstead, Dec. 16, 1831. He had a stricture, brought on from gonorrhœa, in the membranous portion of the urethra, which had resisted the passage of the smallest bougies, and every description of urethral instrument, for four successive months. His sufferings were very great; the urine only passed drop by drop; he had considerable pain in the loins; and when he attempted to void the contents of his bladder, the straining was so great that his eyes immediately became blood-shot. He had sleepless nights, tenesmus, and a constant desire to make water, without being able to effect it. The lancetted stilette, or urethral perforator, was passed down to the stricture and two incisions made. A tea-spoonful of blood followed the incisions. He was desired to go home and keep quiet; to take an aperient; to foment the perineum; to apply leeches, if the pain was great: and to have a bougie passed on the alternate days. This he did, and returned to me in a week. Two more incisions were made, the stricture was perforated, and a No. 10 elastic gum catheter passed into the bladder. He went home immediately in a coach, and, under the superintendence of Mr. Evans, wore the catheter for a day or two, when it caused so much irritation that he was obliged to leave it off. Bougies were ordered every other day, and in a fortnight from this period, a No. 12 steel dilator could be passed into the bladder with the greatest ease; and there was so little impediment in the urethra, that it would have been impossible to have told where the stricture had been present.

Remarks.—In this case it would have been necessary to have divided the stricture from the perineum, had not this treatment been adopted. Besides the pain and uncertainty of such an operation, the time it takes to restore the urethra by this method is considerable, not taking into account the imperfect manner in which it is usually performed. The superiority of the treatment by perforation cannot admit of a doubt; it is accomplished without much pain; with but little loss of blood; the urine flows through the natural channel; the time taken is comparatively short; and the cure is complete.

Case VI.—*Stricture in a man of* 50, *of seventeen or eighteen years standing, which had resisted the use of caustic and the potassa fusa, perforated.*—May, 1831.—Mr. L., æt. 50. This gentleman had suffered from stricture for at least seventeen or eighteen years. He had formerly used the common bougie; but having neglected himself, the diseased part gradually closed up, until he could make water only by drops. The stricture was situated only three inches from the orifice of the urethra; and a hardened mass, like marble, could be felt exteriorly at that part. Both the argentum nitratum and the potassa fusa had been applied from within to the stricture, but neither of these remedies had the least effect. At the present time he suffers extremely; and the urine being kept back, produces the greatest irritation and pain in the urethra. The straight lancetted stilette was passed, the obstruction perforated, and an elastic gum catheter introduced through it into the bladder. This was changed every other day for one of a larger size. When the stricture was sufficiently dilated by these means steel dilators were passed twice in the week, until the

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hardened structure composing the stricture was entirely absorbed. In a month or five weeks he left my care, perfectly well.

Remarks.—This, as in the last case, would have required external division; but the stricture being in that part of the urethra which passes through the penis, it is extremely doubtful whether the wound made in this manner, and in a part so thinly covered, would ever have entirely healed.

Case VII.—*Three Strictures successfully perforated.*—June, 1831.—Mr. C., æt. 53, gives the following history of his case:—When he was a young man, about the age of one or two and twenty, he contracted a gonorrhœa, which continued for some time, and at length ended in a gleet. From this period he observed the stream of urine gradually lessened, until it became very small. He suffered considerable pain and irritation in the urethra, and at length applied to his surgeon, who examined him, and found one stricture three inches from the orifice, and another seven inches: they gave way to dilatation by bougies, and he thought himself well. In a year or two afterwards, however, they returned. The same process was employed as before, and with the same result. They again returned, and he neglected them altogether. The urethra now became extremely irritable; the urine escaped only by drops, and he could get but little sleep: a despondency of mind came on, and he felt he could obtain no relief, the disease having twice returned. He came to London, and placed himself under my care, rather as an experiment than thinking he should derive any benefit from any treatment I might adopt. After having soothed the urethra, by taking blood from the perineum, fomenting, and administering anodynes and aperients, I examined him, and found he had an impassable stricture three inches down the canal. I passed the straight lancetted stilette, and perforated it; and two inches further on there was another stricture. This I left alone till another day, fearing that I might do an injury by doing too much at one time. I dilated the first stricture to the natural size of the canal, and then perforated the second, and discovered another in the membranous portion. This second was dilated to the natural size of the urethra. When, however, I proposed to operate on the third stricture, the patient objected. The despondency of mind had returned, and he wished to leave town, with a view of seeing how the other operations answered. He did so, and I did not hear from him for more than a year, when he called one morning, telling me that he was so satisfied with the plan of treatment neither of the strictures having returned, that he had come back to London on porpose to have the third stricture perforated. The operation was performed, and a catheter left in the bladder for a few days. Steel dilators were then introduced on the alternate days, until they passed with such facility that no one could have told that the urethra had been diseased.

Remarks.—This case is very interesting. There being three strictures, situated as they were, would have rendered the operation of their division from the perineum unadvisable. It is most probable, also, that no escharotic would have answered; besides the slowness of this method of treatment.

The return of strictures is not uncommon; indeed, by the usual treatment of this disease it generally is the case, unless bougies are constantly passed. When, however, they are divided within the urethra, they usually do not return, as in the present case, unless they are perforated by a very small instrument, and the opening made is not enlarged; they then sometimes contract to the size of the original perforation. Despondency of mind is not an infrequent symptom attendant on stricture; indeed, when the disease has been of any duration, it generally may be said to occur more or less. Such a symptom, with that of irritability of temper, cannot surprise us; at least when we take into consideration the harrassing nature of the complaint.

Case VIII.—*Obliteration of nearly four inches of the Urethra successfully perforated.*—In the month of January, 1832, I was requested to see a gentleman who had for several years labored under a permanent stricture of the urethra, which at length had become totally impermeable, not only to bougies and instruments, but almost to the urine itself; and in consequence of this ob-

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struction in the canal, ulceration had taken place behind the part, and the urine had made its escape, by fistulous passages, out at the perineum and scrotum; and through which passages alone it had passed for the last two or three years. Since this period urinary abscesses had repeatedly formed, and produced at the time considerable constitutional disturbance, rigors, pain, and feverishness. The patient, therefore, was always under the necessity of wearing poultices or cloths on the perineum to absorb the pus and urine; and in addition to this miserable state of things, he suffered from frequent priapism; and when semen was emitted, it of course could not be ejected out at the penis, but flowed into the fistulous passages, and thus produced the most distressing symptoms. When we examined him we found him in the following state.

A large mass, of an extremely hard structure, nearly the size of a turkey's egg, and which could be taken in the hand, occupied that part of the perineum which joins with the scrotum, so that part of the substance was in the scrotum, and part in the perineum adjoining it. Through this mass passed several fistulous passages, from whence the urine made its exit; and there were also several parts where pus had collected. On taking the substance in the hand, its connexion with the urethra could be traced, and it appeared to occupy two or three inches of the canal, the corpus spongiosum being consolidated. On examining the urethra, an impermeable stricture was present exactly two inches from the orifice, and through which not even the smallest bougie could be passed.

Mr. Kingdon and myself consulted together, and agreed that the case was of that peculiar description that none of the usual modes of treatment offered the slightest chance of relief. The application of caustic was quite out of the question, the disease occupying so great an extent of the urethra. The division of the part externally, for the same reason, could not be adopted; and the excision of the hardened mass would have destroyed so large a portion of the canal (at least four inches) that the ultimate result would have been extremely doubtful. The only treatment, therefore, left, was the perforation of the part within the canal of the urethra; and even this operation appeared likely to be attended with uncertainty and difficulty, from the great length of urethra that was obliterated. The disease, however, being in the anterior part of the canal, and where it could be pretty well judged whether the cutting was in the right passage or not, I undertook the case. The patient consented to the operation, and fixed to have it performed a fortnight from the consultation, and requested that Mr. Copeland, of Golden-Square, might be present.

On the day appointed, Mr. Copeland, Mr. Kingdon, and myself, met; and the operation was performed in their presence. The penis was elongated with the left hand, and the straight lancetted stilette, or urethral perforator (No. 4,) passed down to the stricture. When the point of the instrument rested upon the obstruction, the lancet was sharply thrust forward; and it penetrated, though not without considerable resistance, the hardened substance of the stricture. The blunt point of the instrument was then forced on into the incision made. The obstruction still existed. Another incision was made, and the blunt point was pushed on into it as before. In this manner, first making an incision, and then passing the blunt point of the instrument on into it, nearly *four inches* of the urethra was perforated. The instrument was then withdrawn, and some bleeding took place; but not more, nor even, perhaps, so much, as might have been expected from such an extent of cut surface. When the bleeding had ceased, which was in about two or three minutes, a small gum elastic catheter was passed through the perforated part into the bladder, secured, and left there. During the whole operation so little pain was given, that the patient at the time expressed his surprise. The newly made canal was in an exact line with the natural course of the urethra; and the structure through which I cut was so hard and tough, that it required forcible incisions to penetrate it. After the operation was finished he was placed in bed, and requested to foment the perineum.

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In the evening he was free from pain: he had no rigors, which was sometimes the case when even a bougie had been passed; and the urine flowed both through and on one side of the catheter. He was ordered an opiate immediately, and a dose of castor oil the next morning. On the next day he had no pain in the urethra, he had passed a good night, and the urine flowed through and on one side of the catheter; and there were no constitutional symptoms more than would naturally occur from such an operation. The catheter was removed, and one double its size introduced.

From this time the catheter was changed to a larger size every second day; and in ten days from the operation a No. 10 catheter could be passed, and in a fortnight a No. 12. Steel dilators were now passed; and in three weeks I took leave of the patient, on condition that he would for the present pass bougies twice in the week for himself, and afterwards as often as he required them.

The fistulous passages remained open, which cannot be wondered at when we consider the great length of time they had existed, and that they formed the only channel by which the urine could be voided. The hardened mass in the perineum became gradually absorbed; but occasionally a few drops of urine passed through the fistulous passages.

On inquiring after the present state of this patient's health, (Feb. 14, 1834, more than two years from the operation,) I received the following answer:—That, although he was not quite so well as during the first six months after the operation, yet he attributed this circumstance to his own neglect, from not having persevered in introducing bougies so frequently as would be desirable. He can now, however, pass a bougie as large as a goose quill, and this he is in the habit of doing only once in six weeks. He experiences a difficulty, from this cause, to open the stricture, and afterwards the parts are generally so inflamed and swelled for about twenty-four hours, that he is obliged to pass a smaller bougie to relieve the spasm, and to assist him in making water. From the swelling and spasm, also, a few drops of the urine and semen are sometimes kept back, and give rise to the occasional formation of abscesses about the opening, which was caused by the stricture when it was in its worst state: in other respects, when the bougie has not been passed, he is very well; he makes water in a good-sized stream, and his health does not suffer.

Remarks.—The immense extent of urethra that was diseased and obliterated in this case is remarkable; and it is not the less so, that the patient was able to bear the perforation of so great a length of the canal at one operation. The pain appeared to be inconsiderable, and the bleeding trifling; both of which, no doubt, may be accounted for by the insensibility and want of vascularity of the ligamentous or cartilaginous structure which formed the disease. The hardened mass in the perineum was no doubt formed from the urine constantly lodging in the fistulous passages, and thus producing a thickening of the parts. There were also some symptoms attending this case not common. The constant disposition to priapism can hardly be accounted for. When we consider the consolidated state of so great a length of the urethra, and of the corpus spongiosum surrounding it, we can only be surprised at this phenomenon occurring so frequently. How to explain such a symptom would be difficult, for, from the obliterated vessels of the corpus spongiosum, and the unyielding and inelastic nature of the indurated urethra, one would have imagined the contrary would have been the case; and that when the corpora cavernosa became distended with blood, the penis would, as in chordee, have been turned downwards. It is a singular fact, that, when the stricture was only touched before the operation, it frequently produced rigor: after the operation, this symptom never occurred. I have observed this in other cases; that is to say, if the stricture was only touched, rigor supervened; if, however, the bougie passed quite through it, this symptom did not happen.

From the account given by the patient, it may be observed, that, although a bougie as large as a goose quill can now be passed, yet the passage is narrowed at the perforated part. This may be accounted for by the patient, as

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he himself acknowledges, having neglected to pass a bougie, (doing it only once in six weeks,) as often as I requested him; and also from my having operated with so small an instrument (a No. 4.) I have observed, that when I am obliged to perforate with a very small instrument, that the stricture, if the passing of bougies be neglected, is liable to close up again to that size. I, therefore, on this account, generally enlarge the passage afterwards with a cutting instrument, which usually prevents such an occurrence. I regretted extremely that I had not the opportunity of doing it in this case; but the time this gentleman could spare to remain under my care being only three weeks, rendered it impracticable. It could be done, however, at this time, and I am convinced with considerable benefit.

The fistulous passages remaining open no doubt is owing to their passing through so diseased and indurated a structure, and their having become, which is usually the case when the urine has passed through them for a considerable time, lined by a membrane something analogous to that of the urethra. The narrowing of the stricture, likewise, keeps back a few drops of urine which lodges in them, and thus irritation arises, producing occasional abscesses. For the same reason, also, a portion of the semen is kept back, and gives rise to the same inconvenience. If the part were widened, it is more than probable that neither of these annoyances would occur.

The present state of this patient, compared with what it was previous to the operation, is even more than comparatively happy. Before, he could pass but few drops of urine through the natural channel; it mostly made its escape out at the perineum and scrotum, and got lodged in the cavities of the urinary abscesses: now, he can make water in a full stream, and the only inconveniences he suffers from are those above mentioned, and which might no doubt be obviated by treatment.—*London Medical Gazette, April*, 1834.

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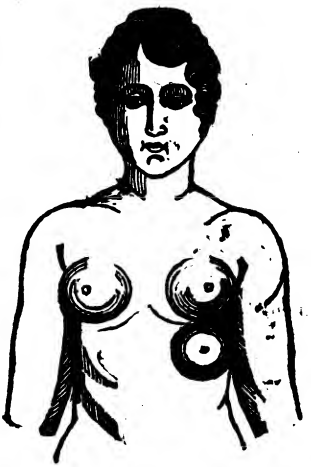
AMERICAN INTELLIGENCE.

DEAR SIR:—The accompanying cut is a representation of a singular freak of nature, as exhibited in the person of a lady in this city, who has been twice under my care in her accouchment. If you think it worthy of notice in your "*Journal and Review*," it is drawn up and presented for that purpose.

Very respectfully, GEORGE C. M. ROBERTS.

Baltimore. July 7, 1834.



52. In the case of Mrs. A****, there are three distinct and well formed mammary glands; the precise situation of each is correctly marked on the figure. The only difference in their appearance is, that the *additional* one is about one third smaller than the two *natural* ones. In both instances of her confinement, labor progressed readily, and was attended with no unpleasant occurrences afterwards. The fever usually attendant on the secretion and flow of the milk was not greater than in common cases. All of the glands produced their quantum of support for the children; and each of them could have been used with facility, but for the patient deeming that *two* were altogether sufficient for ordinary purposes. Under this reflection, she permitted the milk in the third and smaller gland to pass away, endeavored to facilitate it by the usual applications under such circumstances. I never saw a similar case; but have just been informed of one by a member of my family, as existing in the person of a Mrs. K****, of Easton, Talbot county, Maryland. This resembled the case of Mrs. A****, in the fact of there being *three* glands; but whether any farther than in the mere circumstance of their existence, I am unable to say.

53. At the *particular* request of my friend Dr. Samuel Baker, of this city, I send you for publication in your Journal and Review, the following novel and interesting case, which came under my immediate care. A brief statement of it was made out immediately after its occurrence, and published in the late "Baltimore Monthly Journal of Medicine and Surgery."

On the morning of the 30th August, 1829, I was hastily called to the bed-side of Mrs. M******, who had accomplished the full term of gestation. I found her greatly alarmed and agitated, on account of the occurrence of considerable hemorrhage from the uterus. On examination by the "touch," I distinctly discovered what I believed to be the edge of the placenta hanging in the os uteri, resting upon which was the head of the child, of rather larger size than ordinary. As the pain attendant upon labor was progressing, I thought it unnecessary to attempt more at the time being, than the rupture of the membranes. Upon the discharge of a very small quantity of water, the hemorrhage ceased; on account of the pressure of the head upon the placenta, thus closing up the vessels which had been broken in the progress of dilatation of the mouth of the uterus. Labor progressed rapidly, and in about four hours she was delivered of a daughter, which proved to be of rather larger size than is usual.

On the application of my hand to the abdomen of the patient, after the separation of the cord, I found the uterus in a state of considerable distention. This for the moment gave me to suspect the presence of a second child. However, on farther and particular examination, these suspicions were somewhat allayed, from the circumstance of my not being able to discover any thing, but the presence

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of the placenta. I was then led to suppose that the distention possibly originated in the circumstance of retention of water, &c. of which there had been a smaller quantity than usual discharged, as mentioned above. In a few minutes, with the recurrence of pain, the placenta was expelled, which proved to be of *great size.* Instantly the discharge of blood was immense and continued. Judge of my surprise to find attached to the placenta another cord, communicating with the uterus, at once proving the correctness of my first impressions as to the existence of twins. Seeing there was no time to be wasted, because of the great prostration of the patient, and the continuance of the hemorrhage, I instantly introduced my hand, seized the feet of the second child, and without hesitating a moment, commenced its delivery. Its lower extremities and body were easily brought down. Some little difficulty occurred in forcing the head and upper extremities, all of which however was accomplished after some effort. Gentle means were then used to solicit the contraction of the uterus, which fortunately soon took place; and by farther and continued means, in a short time reaction succeeded, and the patient herself recovered from the exceedingly prostrate condition to which the extraordinary discharges had brought her. By great care and attention to her case afterward, all went on well. There was no *excess* of *fever* to any considerable or injurious extent. And after a highly favorable and speedy convalescence, she was enabled to attend to her domestic affairs. The children also continued to do well, and both parent and children were living at the time the brief notice of the case alluded to above was published in Professor Smith's Monthly Journal. During the succeeding summer, however, the smaller of the two children was violently attacked with cholera infantum, which terminated fatally.

What rendered the above case much more critical and unmanageable, was from the *debilitated* state, and excitable temperament of Mrs. M*****, whose constitutional vigor had been greatly impaired by the frequent conception and births of her children. Indeed she had scarcely recovered even her usual quantum of strength consequent upon carrying until their full time, and giving birth to twins about two years prior. Since which time, however, her health has been greatly improved; and in a *subsequent* confinement, in which she was also under my care, nothing unusual occurred.

FACULTY OF THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

J. Edwards Holbrook, M.D. *Professor of Anatomy.*
John Wagner, M.D. *Professor of Surgery.*
S. Henry Dickson, M.D. *Professor of Institutes and Practice of Medicine.*
Edmund Ravenel, M.D. *Professor of Chemistry.*
Thomas G. Prioleau, M.D. *Professor of Obstetrics.*
Henry R. Frost, M.D. *Professor of Materia Medica.*
James Moultrie, Jr. M.D. *Professor of Physiology.*

John Bellinger, M.D. *Demonstrator.*

The first course of Lectures in this institution, terminated on the 7th of March last. The number of Students in attendance, amounted to one hundred and four, of which number 39 received the degree of Doctor of Medicine.

The second course will begin on the second Monday in November next, and be continued until the first Saturday in the March ensuing: after which the Examinations will commence, and as soon as ended, the Degrees, as heretofore, will be conferred.

The edifice, purchased and fitted up during the past year, experience has proved to be admirably adapted to the purpose to which it has been appropriated, and other improvements are contemplated, which will render it more suitable than before.

Besides the select Anatomical and Surgical Museum in the possession of the college, the extensive and well-assorted Philosophical and Chemical Apparatus,

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the valuable and rapidly increasing Library of Medical Works, and the establishment of an Infirmary, in connexion with the other departments of the school, additions are contemplated, which the faculty have no doubt they will be able to make, by the opening of the next session. Orders have already been sent to Europe for whatever cannot be procured in this country; and from the Laboratories and Museums of Italy and France, they calculate to enrich, with specimens that are rare and beautiful, those of their own.

The Infirmary, the establishment of which was necessary to complete the course of Medical Instructions, has amply realized the expectations of its founders, and more than compensated for the loss of the two public institutions once under their control. It has been patronized by individuals from all parts of our state.

The existing regulations require, that each candidate for the diploma, should have attained the age of twenty-one years—studied three with some respectable practitioner—attended two full courses of lectures, one of which must be in this institution—and one of demonstrations, in a dissecting room—be of good moral character—and offer an acceptable Thesis on some Medical subject, in the Greek, Latin, or any of the modern Languages, for the best in each of which, a suitable testimonial will be awarded.

In connection with the foregoing, the faculty take great pleasure in announcing, that a supplementary series of lectures will be delivered in the same building, during the session, by gentlemen whose names are hereunto annexed, on the following subjects:

Dr. J. G. F. Wurdemann, *on Surgical and Pathological Anatomy.*
Dr. W. T. Wragg, *on Minor Surgery.*
Dr. T. Ogier, *on Operative Surgery.*
Dr. Alexander Baron, *on Experimental Physiology.*

JAMES MOULTRIE, Jr. M.D. *Dean of the Faculty.*

UNIVERSITY OF MARYLAND.

The Lectures in the Medical Department of this Institution will commence on the last Monday of October, and continue until the first of March.

Nathaniel Potter, M.D. *Pathology, and the Practice of Medicine.*
Richard Wilmot Hall, M.D. *Obstetrics, and the Diseases of Women and Children.*
Nathan R. Smith, M.D. *Surgery.*
Julius T. Ducatel, M.D. *Chemistry and Pharmacy.*
E. Geddings, M.D. *Anatomy and Physiology.*
Robley Dunglison, M.D. *Materia Medica, Therapeutics, Hygiene, and Medical Jurisprudence.*

Clinical Lectures will be given at the Baltimore Infirmary, by the Professors of the Practice of Medicine and Surgery.

Baltimore, July 1834. R. DUNGLISON, M.D. *Dean.*

At a meeting of the Trustees of the University of Maryland, held on Saturday, 12th July, H. Willis Baxley, M.D. was elected Demonstrator of Anatomy, in the place of Saml. Lyon, M.D. resigned.

LECTURES ON ANATOMY AND PHYSIOLOGY.

BY A. L. WARNER, M.D.

The subscriber will resume his course on Anatomy and Physiology, on Monday, November 4th, to continue four months.

The dissecting room will be opened for the reception of classes on Monday, October 21st, when every facility will be afforded for the prosecution of *Practical Anatomy.*

Lectures on General, Special and Pathological Anatomy and Physiology; with the privilege of the dissecting room, - - - - - - - $10

Admission to the Lectures, without the use of the dissecting room, - - - 5

Private pupils will be received at the usual rate; who shall have the use of a commodious office, and a valuable medical library.

Baltimore, July, 1834.

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Jones' Manual of Pharmacology,
Seymour on Insanity,
Cocks on Amputations,
Blundell's Physiological Researches,
Phillips on Inflammation,
Alderson on Cholera,
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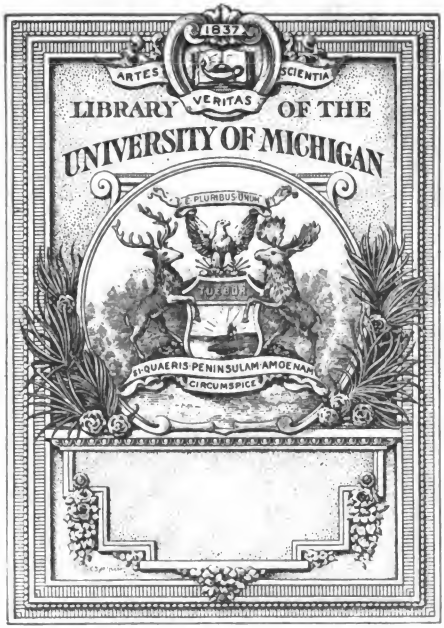

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